Building Code Notes

Chapter 3 – Use and Occupancy
Section 310
Business Group B
304.1 - B Professional Services
This project complies with this provision in the International Building Code.

Chapter 5 – General Building Heights and Areas
Section 503
General Height and Area Limitations
Table 503 – Allowable Building Height and Building Areas
Group B, Type V-B construction, 1 floor, 3,000 SF
(2 floors and 9,000 SF per floor allowed.)
This project complies with these provisions in the International Building Code.

Section 504
Height - 1 floor proposed, 2 floors allowed.
Building height allowed outright by Table 503, without modifications.

Section 506
Area – 3,000 SF proposed, 18,000 SF allowed.
Building area allowed outright by Table 503, without modifications.

Chapter 6 – Types of Construction
Section 602
Construction Classification
602.5 – Type V.

Table 601 - Fire-Resistance Rating Requirements for Building Elements
Type V-B

Structural Frame		0 hour
Bearing walls		
	Exterior	0 hour
	Interior	0 hour
Nonbearing walls and partitions		
	Exterior	Table 602
Nonbearing walls and partitions		
	Interior	0 hour
Floor Construction		0 hour
Roof Construction		0 hour

This project complies with these provisions in the International Building Code.

Table 602 – Fire Resistance Rating Requirements for Exterior Walls Based on Fire Separation Distance

X < 5	Group B	1 hour (north wall)
5 ≤ X < 10	Group B	1 hour
10 ≤ X < 30	Group B	0 hour
X ≥ 30	Group B	0 hour (south, east, and west walls)

This project complies with these provisions in the International Building Code.

Zoning Code Notes

Address:	5655 221st Place SE, Issaquah, WA 98027
APN:	71275300020
Zoning:	Mixed Use (Central Issaquah Plan)
	Land Use code summary
4.0	**Zoning Districts, Uses and Standards Summary**
Table 4.2	Intent of Zoning Districts
	Mixed Use (MU)
Table 4.3	Table of Permitted Land Uses
Table 4.3A	Levels of Review Mixed Use < 4,000 SF Level 0.
Table 4.3A	Table of Permitted Land Uses **Medical** Medical / Dental Offices (See Office / Professional) **Office / Professional / Financial** Permitted
	The project complies with these provisions of the Issaquah Central Plan.
4.4	**District Standards**
Table 4.4	District Standards Summary Table Mixed Use (MU)

		Commercial
FAR	Min.	n/a
	Base	1.25
	Max.	3.5
Height	Base	48-feet
	Max.	85-feet
Setbacks	Side	0-feet Max. 0-feet
Build-to-line		0-feet to 10-feet

RENDERING

(N.T.S, NOT FOR CONSTRUCTION)

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A3.3	WEST ELEVATION
A3.4	GLAZING SCHEDULE
A3.5	GLAZING AREA DIAGRAM
A4.0	BUILDING SECTIONS
A5.0	RESTROOM & RECEPTION ELEVATIONS
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S3.1	FOUNDATION DETAILS
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S4.2	WOOD STUD AND SHEAR WALL DETAILS
S5.1	ROOF FRAMING DETAILS
S5.2	STRUCTURAL ROOF FRAMING DETAILS
S6.1	CANOPY FRAMING DETAILS
M2.0	MECHANICAL RCP
E2.0	LIGHTING RCP
E2.1	EXTERIOR LIGHTING PLAN

PROJECT TEAM:

OWNER:
RGLSDD, LLC
c/o Silas Dudley
4127 93rd Ave SE
Mercer Island, WA 98040
silas.dudley@gmail.com

DESIGNER / APPLICANT:
Chris Pardo Design- Elemental Architecture
121 Prefontaine Pl S, Seattle, WA 98104
P: 206 329-1654

STRUCTURAL ENGINEER:
DCI Engineers
818 Stewart St # 1000, Seattle, WA 98101
P: 206.787.8426

CIVIL ENGINEER:
Core Design, Inc.
14711 NE 29th Place, Suite 101 Bellevue, WA 98007
P:425.897.4521

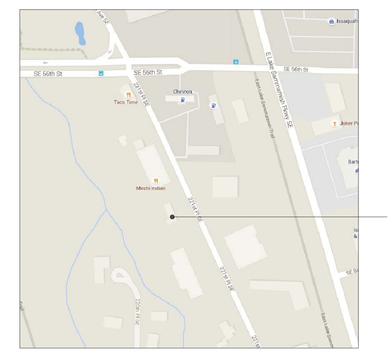
LANDSCAPE:
Core Design, Inc.
14711 NE 29th Place, Suite 101 Bellevue, WA 98007
P:425.897.4521

LEGAL DESCRIPTION

LOT 4 OF JAMES BUSH ADDITION, AS PER PLAT RECORDED IN VOLUME 44 OF PLATS, PAGE45, RECORDS OF KING COUNTY; SITUATE IN THE CITY OF ISSAQAH, COUNTY OF KING, SATE OF WASHINGTON.

VICINITY MAP

SCALE: N.T.S.



CHRIS PARDO DESIGN
ELEMENTAL ARCHITECTURE

121 Prefontaine Pl S
Seattle WA 98104
p 206.351.6535

elementalarchitecture.com

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These drawings were prepared for **"Dudley Smiles"** a project in Issaquah, WA. They are not intended for use on any other project.

Stated drawing scale is based on 34x22 sheet.

4430 REGISTERED ARCHITECT PETER DAVID GEAVES STATE OF WASHINGTON

OFFICE BUILDING FOR DUDLEY SMILES

5655 221ST PLACE SE ISSAQUAH WA 98027

No.	Date	Issue
1	06.01.16	Permit

COVER SHEET

Job #: 127

CV
Sheet

ISSAQUAH 5655-221ST DUDLEY SMILES

DUDLEY SMILES

CIVIL PLANS

KEY MAP

SCALE: 1" = 500'

SITE INFORMATION

DEVELOPER/OWNER	SILAS DUDELY 4127 - 93RD PLACE SE MERCER ISLAND, WA 98040 (206) 992-5098
ENGINEER/ SURVEYOR/PLANNER	CORE DESIGN, INC. 14711 N.E. 29TH PL. SUITE 101 BELLEVUE, WA 98007 (425) 885-7877 CONTACT: STACIA BLOOM, PE KEVIN VANDERZANDEN, PLS
DRAINAGE BASIN	NORTH FORK ISSAQUAH CREEK FREEGARD SUB-BASIN
ACREAGE	18,104± = 0.416 ACRES
ZONING	MIXED USE
TOTAL NUMBER OF BUILDINGS	1 BUILDING
LAND USE PERMITTED	MIXED USE
LAND USE PROPOSED	MIXED USE
ASSESSOR'S PARCEL NUMBER(S)	1275300020
UTILITY PURVEYORS	
WATER	SAMMAMISH PLATEAU WATER AND SEWER DISTRICT
SANITARY SEWER	SAMMAMISH PLATEAU WATER AND SEWER DISTRICT
STORM DRAINAGE	CITY OF ISSAQUAH
TELEPHONE	QWEST COMMUNICATIONS
POWER	PUGET SOUND ENERGY
GAS	PUGET SOUND ENERGY
CABLE TV	COMCAST
OTHER SERVICES	
SCHOOL DISTRICT	ISSAQUAH SCHOOL DIST. 411
FIRE PROTECTION	EASTSIDE FIRE AND RESCUE
WATER DEMAND COMMERCIAL	XX GPD
SANITARY SEWER PEAK WET WEATHER FLOW COMMERCIAL	XX GPD
WEST DISPERSION	
10YR PEAK STORMWATER FLOWS	0.516 CFS
100YR PEAK STORMWATER FLOWS	0.642 CFS
SETBACKS	
FRONT	0 FT
SIDE	0 FT
REAR	0 FT
BASE BUILDING HEIGHT	14 FT
MAX. BUILDING HEIGHT (W/ PARAPET)	20 FT
PARKING PROVIDED	9 STALLS + 1 ADA STALL = 10 STALLS TOTAL
GRADING QUANTITIES	CUT = 15 CY FILL = 255 CY

LEGAL DESCRIPTION

LOT 4 OF JAMES BUSH ADDITION, AS PER PLAT RECORDED IN VOLUME 44 OF PLATS, PAGE 45, RECORDS OF KING COUNTY; SITUATE IN THE CITY OF ISSAQUAH, COUNTY OF KING, STATE OF WASHINGTON.

REFERENCES

1. CITY OF ISSAQUAH LOT LINE ADJUSTMENT, RECORDING NO. 201311590003, RECORDS OF KING COUNTY, WA.

REFERENCES

1. THIS SURVEY WAS CONDUCTED WITHOUT THE BENEFIT OF A TITLE REPORT.
2. THIS SURVEY REPRESENTS VISIBLE PHYSICAL IMPROVEMENT CONDITIONS EXISTING ON NOVEMBER 25, 2015. ALL SURVEY CONTROL INDICATED AS "FOUND" WAS RECOVERED FOR THIS PROJECT IN NOVEMBER, 2015.
3. PROPERTY AREA = 18,104± SQUARE FEET (0.4156± ACRES).
4. ALL DISTANCES ARE IN FEET.
5. THIS IS A FIELD TRAVERSE SURVEY. A SOKKIA FIVE SECOND COMBINED ELECTRONIC TOTAL STATION WAS USED TO MEASURE THE ANGULAR AND DISTANCE RELATIONSHIPS BETWEEN THE CONTROLLING MONUMENTATION AS SHOWN. CLOSURE RATIOS OF THE TRAVERSE MET OR EXCEEDED THOSE SPECIFIED IN WAC 332-130-090. ALL MEASURING INSTRUMENTS AND EQUIPMENT ARE MAINTAINED IN ADJUSTMENT ACCORDING TO MANUFACTURER'S SPECIFICATIONS.
6. UTILITIES OTHER THAN THOSE SHOWN MAY EXIST ON THIS SITE. ONLY THOSE UTILITIES WITH EVIDENCE OF THEIR INSTALLATION VISIBLE AT GROUND SURFACE ARE SHOWN HEREON. UNDERGROUND UTILITY LOCATIONS SHOWN ARE APPROXIMATE ONLY. UNDERGROUND CONNECTIONS ARE SHOWN AS STRAIGHT LINES BETWEEN SURFACE UTILITY LOCATIONS BUT MAY CONTAIN BENDS OR CURVES NOT SHOWN. SOME UNDERGROUND LOCATIONS SHOWN HEREON MAY HAVE BEEN TAKEN FROM PUBLIC RECORDS. CORE DESIGN ASSUMES NO LIABILITY FOR THE ACCURACY OF PUBLIC RECORDS.

BASIS OF BEARINGS

THE EAST-WEST CENTER-OF-SECTION LINE OF SECTION 21, TOWNSHIP 24 NORTH, RANGE 6 EAST, W.M., USING KING COUNTY SURVEY CONTROL POINT ID 1818, THE EAST QUARTER CORNER OF SECTION 21, TO KING COUNTY SURVEY CONTROL POINT 1968 ON THE CENTERLINE OF SE 56TH STREET AND SAID EAST-WEST CENTER-OF-SECTION LINE, TAKEN AS NORTH 88°29'50" WEST

VERTICAL DATUM

NAVD 88

BENCHMARK

4"X4" CONC. MON. W/ 11/2" BRASS DISK, DOWN 0.5' AT CENTER OF INTERSECTION OF E. LAKE SAMMAMISH PKWY. & SE 56TH ST.
ELEVATION= 53.51

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C5.01	UTILITY PLAN
C5.20	UTILITY PROFILES
C7.20	STRIPING, SIGNING AND FIRE DEPT. SITE PLAN

GROUND COVER INFORMATION

GROSS SITE AREA	18,104± SF	0.416 ACRES	
SITE AREA, LESS R/W DEDICATION	17,904± SF	0.411 ACRES	
DEVELOPABLE SITE AREA	10,995± SF	0.252 ACRES	
EXISTING CONDITION:			
ASPHALT/PAVING	2,628± SF	0.060 ACRES	
HARDSCAPE COVERING	1,160± SF	0.027 ACRES	
BUILDING FOOTPRINT	2,042± SF	0.047 ACRES	
TOTAL IMPERVIOUS AREA:	5,222± SF	0.120 ACRES	28.8%
TOTAL PERVIOUS AREA:	12,882± SF	0.296 ACRES	71.2%
PROPOSED CONDITION:			
ASPHALT/PAVING	3,450± SF	0.079 ACRES	
HARDSCAPE COVERING	540± SF	0.013 ACRES	
BUILDING FOOTPRINT	2,713± SF	0.062 ACRES	
TOTAL IMPERVIOUS AREA:	6,711± SF	0.154 ACRES	37.5%
TOTAL PERVIOUS AREA:	11,193± SF	0.257 ACRES	62.5%

GROSS SITE AREA	18,104± SF	0.416 ACRES
DEVELOPABLE SITE AREA	10,995± SF	0.252 ACRES
EXISTING CONDITION:		
ONSITE ASPHALT/PAVING	2,628± SF	0.060 ACRES
ONSITE HARDSCAPE COVERING	552± SF	0.013 ACRES
ONSITE BUILDING FOOTPRINT	2,042± SF	0.047 ACRES
TOTAL ONSITE IMPERVIOUS AREA:	5,222± SF	0.120 ACRES
TOTAL ONSITE PERVIOUS AREA:	12,882± SF	0.296 ACRES

UNDERGROUND LOCATOR SERVICE
CALL BEFORE YOU DIG!
1-800-424-5555

APPROVAL CONDITIONS

BY DATE

APPROVED BY 56th-221st DEVELOPMENT, LLC FOR REVIEW BY THE DSD

BY DATE

PLANNING	ENGINEERING
DSD Planner Date	DSD Engineer Date
☐ Reviewed & Determined to be not applicable	☐ Reviewed & Determined to be not applicable
DSD LS Arch. Date	DSD Engineer Date
☐ Reviewed & Determined to be not applicable	☐ Reviewed & Determined to be not applicable

DSD Program Manager Date

Public Works Engr Director Date

ONLY SHEETS WITH AUTHORIZING SIGNATURES HAVE BEEN APPROVED FOR CONSTRUCTION

NO.	REVISIONS	DATE

05-11-16

CORE DESIGN
14711 NE 29th Place Suite 101
Bellevue, Washington 98007
425.885.7877 Fax 425.885.7963
ENGINEERING · PLANNING · SURVEYING

COVER SHEET
5655 221ST STREET - ISSAQUAH
DUDLEY SMILES
4127 93RD PLACE SE
MERCER ISLAND, WA 98040

DATE	MAY 2016
DESIGNED	STACIA BLOOM, PE
DRAWN	LISA JOHNSON
APPROVED	STACIA BLOOM, PE
	KEVIN VANDERZANDEN, PLS PROJECT MANAGER

SHEET C1.01 OF 10

PROJECT NUMBER 14047D

2012 GENERAL NOTES TO CONSTRUCTION PLANS

1.0 GENERAL

1.1. CONTRACTORS SHALL LIMIT ALL CONSTRUCTION ACTIVITIES AND HEAVY EQUIPMENT OPERATION TO BETWEEN 7:00 AM AND 6:00 PM MONDAY THROUGH FRIDAY UNLESS ALTERNATIVE HOURS ARE APPROVED BY THE DSD.

1.2. CONTRACTORS SHALL HAVE A CITY OF ISSAQUAH BUSINESS LICENSE.

1.3. CONTRACTORS SHALL HAVE COPIES OF THE APPROVED PLANS, APPLICABLE CITY STANDARDS, AND THE SPILL RESPONSE PLAN ON-SITE AT ALL TIMES. THE "CITY STANDARDS" REFER TO THE CITY OF ISSAQUAH STREET STANDARDS DATED 2010, CITY OF ISSAQUAH WATER STANDARDS DATED 1988 AND REVISED 2002, AND CITY OF ISSAQUAH SEWER STANDARDS DATED 1988 AND REVISED 2005. SOME OF THESE CITY STANDARDS HAVE NOT BEEN STAMPED BY A PROFESSIONAL ENGINEER AND, PER WAC 196-23-020, THEY ARE PROVIDED AS ENGINEERING DESIGN AIDS ONLY. CONTRACTORS SHALL CONTACT THE ENGINEER AND DSD PRIOR TO USING ANY ELEMENTS OF THE CITY STANDARDS THAT ARE NOT SPECIFICALLY CALLED OUT IN THE GENERAL NOTES FOR ISSAQUAH HIGHLANDS ROADS & UTILITIES OR SHOWN ON THE PLANS & SPECIFICATIONS. CITY STANDARDS SHALL NOT BE APPROVED FOR USE UNLESS THEY ARE SPECIFICALLY REFERENCED IN THE APPROVED CONSTRUCTION PLANS OR THROUGH A DESIGN CHANGE APPROVED BY THE DSD.

1.4. CONTRACTORS SHALL REFUEL ALL EQUIPMENT ON-SITE USING DSD APPROVED METHODS AND PROCEDURES.

1.5. CONTRACTORS SHALL PROVIDE THE DSD INSPECTOR WITH A MATERIALS LIST A MINIMUM OF TEN WORKING DAYS BEFORE INSTALLATION. THE LIST SHALL INCLUDE MANUFACTURER AND/OR MODEL NUMBER (IF APPLICABLE) OF MATERIAL AND EQUIPMENT TO BE INSTALLED. THE MANUFACTURER'S TECHNICAL SPECIFICATIONS FOR PIPE, APPURTENANCES AND EQUIPMENT SHALL BE SUPPLIED TO THE DSD UPON REQUEST.

1.6. CONTRACTORS SHALL LAY ALL WATER, SEWER AND STORM DRAINAGE PIPELINES "UP-HILL" STARTING AT THE LOWEST MAIN ELEVATION. THE MAIN SHALL BE POSITIONED SO THAT THE BELL END IS ON THE HIGHER SIDE OF THE PIPE SEGMENT AND THE PLAIN END INSERTED INTO THE BELL END. PIPE ENDS SHALL NOT BE DRIVEN HOME, BUT SHALL BE POSITIONED WITH ADEQUATE ROOM FOR THERMAL EXPANSION OF THE PIPE NETWORK WITHOUT BUCKLING OR COMPRESSION OF THE JOINTS.

1.7. CONTRACTORS SHALL PLACE TRENCH BACKFILL IN UNIFORM LOOSE LIFTS NOT EXCEEDING 12_INCHES IN THICKNESS IN NON-TRAVELED AREAS OR 6-INCHES IN TRAVELED AREAS. TRENCH BACKFILL LOCATED BETWEEN THE BOTTOM OF THE PIPE AND 6-INCHES ABOVE THE PIPE CROWN SHALL NOT CONTAIN ROCKS LARGER THAN 3-INCHES IN DIAMETER. TRENCH BACKFILL LOCATED ABOVE THE PIPE ZONE SHALL MEET WSDOT SPEC. 9-03.14(3) OR AS APPROVED BY THE DSD. TRENCH BACKFILL LOCATED WITHIN THE TOP 4-FEET SHALL BE COMPACTED TO A MINIMUM OF 95 PERCENT OF THE SOIL'S MAXIMUM DRY DENSITY AS DETERMINED USING MODIFIED PROCTOR. COMPACTION TESTING IN TRENCHES GREATER THAN 4 FT. IN DEPTH MAY BE ACCOMPLISHED BY MAINTAINING A COMPACTION PATTERN PROVEN TO MEET COMPACTION REQUIREMENTS. ALL NON WSDOT SPEC. MATERIAL SHALL INCLUDE GRADATION REPORT FOR DSD REVIEW AND APPROVAL PRIOR TO PLACEMENT.

1.8. CONTRACTORS SHALL NOT INSTALL ABOVE GROUND COPPER OR GALVANIZED MATERIALS OTHER THAN VAULT LIDS OR OTHER DSD APPROVED ITEMS.

1.9. DEVELOPER SHALL CONTRACT WITH A GEO-TECHNICAL ENGINEER LICENSED IN THE STATE OF WASHINGTON TO SUPERVISE ALL TRENCH AND ROADWAY BACKFILL AND SIGNIFICANT GRADING ACTIVITIES. CONSTRUCTION RECORDS OF SOIL PLACEMENT AND COMPACTION TESTING SHALL BE TRANSMITTED TO THE DSD ON A WEEKLY BASIS. ALL TESTS SHALL INCLUDE A MAP SHOWING THE TESTING LOCATION, THE ISSAQUAH PUB # AND NAME OF PLAN SET USED FOR CONSTRUCTION. A SEPARATE REPORT SHALL BE ISSUED FOR EACH PUB #.

1.10. DEVELOPER SHALL SCHEDULE A PRE-CONSTRUCTION MEETING WITH THE DSD PRIOR TO ANY CONSTRUCTION ACTIVITY.

1.11.THE FOLLOWING ORDER OF PRECEDENCE SHALL APPLY IF THERE ARE INCONSISTENCIES BETWEEN THE DIFFERENT ELEMENTS OF THE CONSTRUCTION PLANS: 1) DSD APPROVED FIELD CHANGES, 2) DSD APPROVED DESIGN CHANGES, 3) DSD APPROVED PLANS & SPECIFICATIONS, 4) GENERAL NOTES FOR ISSAQUAH HIGHLANDS ROADS & UTILITIES, AND 5) WSDOT STANDARD SPECIFICATIONS FOR ROAD, BRIDGE AND MUNICIPAL CONSTRUCTION, CURRENT EDITION.

2.0 STORMWATER

1.1. CONTRACTORS SHALL CONSTRUCT STORM PIPELINES WITH CONCRETE, LCPE, HDPE, PVC OR ALUMINIZED TYPE 2 CORRUGATED STEEL PIPE. PIPE SHALL BE RATED FOR H20 SURFACE LOADS WHEN INSTALLED IN AREAS SUBJECT TO TRAFFIC.

1.2. CONTRACTORS SHALL INSTALL VANE TYPE CATCH BASIN GRATES UNLESS OTHERWISE NOTED.

1.3. CONTRACTORS SHALL INSTALL A 2X4 POST STENCILED "STORM" IN 2-INCH LETTERS WITH THE ELEVATION OF THE STUB INVERT PERMANENTLY MARKED. MARKER TO BE ATTACHED TO PIPE INVERT WITH MINIMUM 12 GAUGE WIRE. CONTRACTOR SHALL EXPOSE, SURVEY, AND BACKFILL ALL STUBS INSTALLED WITHOUT 2X4 POSTS AND INVERT ELEVATIONS. PROVIDING THE DEPTH TO THE STUB IS NOT ACCEPTABLE. CONTRACTOR MUST PROVIDE ACTUAL INVERT ELEVATION.

3.0 STREETS & SIDEWALKS

1.1. CONTRACTORS SHALL INSTALL PERMANENT ROADWAY MONUMENTS AT ALL PC'S, PT'S AND AT INTERSECTIONS. THE MONUMENTS SHALL BE IN ACCORDANCE WITH CITY STANDARD DETAILS T-43, DATED AUG. 2010.

1.2. CONTRACTORS SHALL COMPACT ROADWAY SUBGRADE IN UNIFORM LOOSE LIFTS NOT EXCEEDING 12 INCHES AND COMPACTED TO A MINIMUM OF 95 PERCENT OF THE SOIL'S MAXIMUM DRY DENSITY AS DETERMINED USING MODIFIED PROCTOR. RECYCLED ASPHALT PAVEMENT AND MINERAL AGGREGATE MAY BE USED FOR ROAD SUBGRADE IF APPROVED BY THE GEOTECHNICAL ENGINEER PRIOR TO PLACEMENT. ALL SUBGRADE SHALL BE INSPECTED BY THE DSD PRIOR TO PLACEMENT OF BASE COURSE AND OTHER ROADWAY MATERIALS. HOT MIX ASPHALT SHALL BE COMPACTED TO 92% OF THE MAXIMUM DENSITY.

1.3. CONTRACTORS SHALL REQUEST A PRE-FINAL LIFT (WEARING COURSE) INSPECTION FROM THE DSD A MINIMUM OF ONE BUSINESS DAY PRIOR TO FINAL LIFT PLACEMENT. THE DSD WILL INSPECT AND APPROVE THE ATB SURFACE PRIOR TO INSTALLATION OF THE FINAL LIFT. FINAL LIFT PAVING THAT IS PLACED WITHOUT DSD INSPECTION IS SUBJECT TO REMOVAL AND REPAIR AT THE CONTRACTOR'S SOLE COST.

1.4. DEVELOPER SHALL CONTRACT WITH A GEO-TECHNICAL ENGINEER LICENSED IN THE STATE OF WASHINGTON TO TEST THE SUBGRADE AT 200' MINIMUM SPACING FOR COMPLIANCE WITH THE COMPACTION STANDARD.

1.5. CONTRACTORS SHALL INSTALL CONCRETE SIDEWALKS WITH A BROOM FINISH AND 4-INCH SHINERS AT ALL EXPANSION JOINTS AND ALL EXPOSED EDGES, UNLESS OTHERWISE NOTED. SIDEWALKS SHALL BE 6-INCH MINIMUM THICKNESS WHERE SUBJECT TO TRAFFIC LOADS AND 4-INCH MINIMUM THICKNESS ELSEWHERE. EXPANSION JOINTS SHALL BE PLACED NO MORE THAN 20-FEET APART. CONCRETE SHALL BE PLACED OVER 4-INCHS OF COMPACTED SUBGRADE CONFORMING TO WSDOT 9-03.9(3).

1.6. CONTRACTORS SHALL REQUEST A PRE-POUR INSPECTION IN WRITING FROM THE DSD A MINIMUM OF ONE BUSINESS DAY PRIOR TO POURING ANY WHEELCHAIR RAMPS. THE DSD WILL INSPECT AND APPROVE THE WHEELCHAIR RAMP FORMS BY SIGNING THE CONTRACTOR'S RED-LINE PLANS. WHEELCHAIR RAMPS THAT ARE POURED WITHOUT DSD INSPECTOR WRITTEN APPROVAL ARE SUBJECT TO REMOVAL AND REPLACEMENT AT THE CONTRACTOR'S SOLE COST.

1.7. SIDEWALKS, RAMPS, AND DRIVEWAYS THAT PROVIDE PEDESTRIAN ACCESSIBLE ROUTES SHALL COMPLY WITH THE FOLLOWING: CHANGES IN LEVEL UP TO ¼-INCH MAY BE VERTICAL AND WITHOUT EDGE TREATMENT, CHANGES IN LEVEL BETWEEN ¼_INCH AND ½-INCH SHALL BE BEVELED WITH A SLOPE NO GREATER THAN 1V:2H, CHANGES IN

4.0 CLEARING, GRADING AND EARTHWORK

1. CLEARING, GRADING AND EARTHWORK

1.1. CONTRACTORS MAY WORK USING THE APPROVED TESC MEASURES SHOWN ON THE PLANS.. CONTRACTORS SHALL KEEP ALL ROADWAYS CLEAN AND FREE OF SEDIMENT, MUD, ROCK AND DEBRIS.

1.2. CONTRACTORS SHALL COMPACT ALL BUILDING AND PAVEMENT AREAS LOCATED OUTSIDE OF PUBIC RIGHTS-OF-WAYS IN UNIFORM LOOSE LIFTS NOT EXCEEDING 12 INCHES AND SHALL BE COMPACTED TO A MINIMUM OF 95 PERCENT OF THE SOIL'S MAXIMUM DRY DENSITY AS DETERMINED USING MODIFIED PROCTOR.

1. TESC COORDINATION

A. THE APPLICANT MUST DESIGNATE A TESC SUPERVISOR WHO SHALL BE RESPONSIBLE FOR THE PERFORMANCE, MAINTENANCE, AND REVIEW OF TESC MEASURES AND FOR COMPLIANCE WITH ALL PERMIT CONDITIONS RELATING TO TESC. THE TESC SUPERVISOR SHALL BE A CERTIFIED EROSION AND SEDIMENT CONTROL LEAD AS DEFINED BY THE DEPARTMENT OF ECOLOGY. NOTE: THE APPLICANT IS ULTIMATELY RESPONSIBLE FOR PERMIT COMPLIANCE, REGARDLESS OF WHO HIRES THE TESC SUPERVISOR.

B. AN ONSITE TESC PRECONSTRUCTION MEETING SHALL BE HELD BEFORE ANY WORK BEGINS TO REVIEW IMPLEMENTATION OF THE TESC PLANS.

C. ANY PERMANENT FLOW CONTROL OR WATER QUALITY FACILITY USED AS A TEMPORARY SETTLING BASIN SHALL BE MODIFIED WITH THE NECESSARY EROSION CONTROL MEASURES AND SHALL PROVIDE ADEQUATE STORAGE CAPACITY. INFILTRATION FACILITIES SHALL NOT BE USED FOR TESC.

4.0 CLEARING, GRADING AND EARTHWORK (CONT.)

1. TESC INSTALLATION

A. TESC FACILITIES ARE REQUIRED YEAR ROUND.

B. THE TESC FACILITIES REQUIRED BY THE PERMIT MUST BE CONSTRUCTED PRIOR TO OR IN CONJUNCTION WITH ALL CLEARING AND GRADING SO AS TO ENSURE THAT THE SEDIMENT-LADEN WATER DOES NOT ENTER THE CITY DRAINAGE SYSTEM, SURFACE WATERS, OR WETLANDS. ADJACENT PROPERTIES SHALL BE PROTECTED FROM SEDIMENT-LADEN RUNOFF.

C. THE BOUNDARIES OF ANY CLEARING LIMITS AND TREE PROTECTION INCLUDED IN THE PLAN SHALL BE CLEARLY FLAGGED BY SURVEY TAPE OR FENCING PRIOR TO CONSTRUCTION. NO DISTURBANCE BEYOND THE CLEARING LIMITS IS ALLOWED. THE CLEARING LIMITS SHALL BE MAINTAINED BY THE TESC SUPERVISOR FOR THE DURATION OF CONSTRUCTION, UNTIL FINAL LANDSCAPING OR OTHER PERMANENT SITE STABILIZATION.

D. ANY STABILIZED CONSTRUCTION ENTRANCES SHALL BE INSTALLED AT THE BEGINNING OF CONSTRUCTION AND MAINTAINED FOR THE DURATION OF THE PROJECT. ONSITE ROADS AND PAVED AREAS SHALL BE KEPT CLEAN TO MINIMIZE TURBIDITY IN RUNOFF. ADDITIONAL MEASURES, SUCH AS CONSTRUCTED WHEEL WASH SYSTEMS OR WASH PADS, SHALL BE REQUIRED IF NEEDED TO ENSURE SEDIMENT IS NOT TRACKED OUT TO CITY STREETS. ANY DIRT TRACKED ONTO CITY STREETS SHALL BE SWEPT AS NEEDED OR AS DIRECTED BY THE CITY OF ISSAQUAH. STREET SWEEPING IS NOT CONSIDERED A TESC MEASURE.

E. TESC MEASURES SHALL BE APPLIED IN ACCORDANCE WITH APPENDIX D OF THE KING COUNTY SURFACE WATER DESIGN MANUAL, "EROSION AND SEDIMENT CONTROL STANDARDS". FOR EXAMPLE, FOR STRAW MULCH, THE MINIMUM THICKNESS IS 2 TO 3 INCHES.

F. ANY AREAS OF EXPOSED SOILS, INCLUDING ROADWAY EMBANKMENTS, THAT WILL NOT BE DISTURBED FOR TWO CONSECUTIVE DAYS DURING THE WET SEASON (OCT 1 TO APRIL 30) OR SEVEN DAYS DURING THE DRY SEASON (MAY 1 TO SEPT 30) SHALL BE IMMEDIATELY STABILIZED WITH APPROVED TESC METHODS (E.G. SEEDING, MULCHING, PLASTIC COVERING, ETC.). THESE TIME LIMITS MAY BE MODIFIED BY THE CITY TO ADDRESS SPECIFIC SITE CONDITIONS.

G. PRIOR TO THE BEGINNING OF THE WET SEASON (OCT 1), ALL DISTURBED AREAS SHALL BE REVIEWED TO IDENTIFY WHICH ONES CAN BE SEEDED OR OTHERWISE COVERED IN PREPARATION FOR THE WINTER RAINS. IF COVER MEASURES ARE NOT ESTABLISHED BY OCT 1, ADDITIONAL TESC MEASURES SHALL BE REQUIRED.

3. TURBIDITY MONITORING:

A. DISCHARGE FROM THE PROJECT SITE SHALL NOT EXCEED 100 NTUS AT ALL TIMES UP TO THE 10 YEAR/24 HOUR STORM EVENT. THIS EVENT IS DEFINED AS 3.5 INCHES OF RAINFALL OVER A 24 HOUR PERIOD, AS MEASURED AT THE CITY'S RAIN GAGE. DATA FROM THIS RAIN GAGE IS POSTED ON THE CITY'S WEBSITE. EXCEEDANCE OF THE 100 NTU LIMIT IS CONSIDERED A VIOLATION OF THE PERMIT AND IS SUBJECT TO STOP WORK AND CODE VIOLATION PENALTIES.

B. THE CITY OF ISSAQUAH WILL MEASURE THE TURBIDITY OF THE DISCHARGE AT THE DESIGNATED MONITORING POINTS TO VERIFY COMPLIANCE WITH THE 100 NTU DISCHARGE LIMIT. THE TESC SUPERVISOR SHALL BE NOTIFIED OF DISCHARGES ABOVE 25 NTUS, SO THAT ACTION CAN BE TAKEN TO KEEP DISCHARGES BELOW 25 NTUS. FOR PROJECT SITES WHERE DESIGNATING A MONITORING POINT IS NOT FEASIBLE (E.G. FLAT SITES), THE MONITORING LOCATIONS WILL BE AT THE DISCRETION OF THE CITY OF ISSAQUAH.

C. MONITORING POINTS SHALL BE READILY ACCESSIBLE TO THE CITY OF ISSAQUAH AT ALL TIMES FOR ALL PHASES OF CONSTRUCTION.

4. ROUTINE TESC MAINTENANCE

A. THE TESC FACILITIES SHALL BE INSPECTED BY THE TESC SUPERVISOR DAILY OR MORE OFTEN DURING RAINFALL, AND MAINTAINED TO ENSURE PROPER FUNCTIONING. WRITTEN DOCUMENTATION IS REQUIRED FOR DISCHARGES ABOVE 25 NTUS AND SHALL BE READILY AVAILABLE AT THE PROJECT SITE.

B. THE TESC FACILITIES SHOWN ON THIS PLAN ARE THE MINIMUM REQUIREMENTS FOR ANTICIPATED SITE CONDITIONS. DURING THE CONSTRUCTION PERIOD, THESE TESC FACILITIES SHALL BE MODIFIED AS NEEDED FOR UNEXPECTED STORM EVENTS OR OTHER UNFORESEEN CIRCUMSTANCES, AND TO ACCOUNT FOR CHANGING SITE CONDITIONS (E.G. ADDITIONAL COVER MEASURES, ADDITIONAL SUMP PUMPS, RELOCATION OF DITCHES AND SILT FENCES, PERIMETER PROTECTION ETC.).

C. THE TESC SUPERVISOR SHALL NOTIFY THE CITY OF ISSAQUAH PRIOR TO PUMPING ANY DISCHARGE OFFSITE OR TO CRITICAL AREAS.

D. TESC FACILITIES ON INACTIVE SITES SHALL BE INSPECTED AND MAINTAINED A MINIMUM OF ONCE A MONTH OR WITHIN 24 HOURS FOLLOWING A STORM EVENT.

5. UPDATED TESC PLANS

A. REVISED TESC PLANS SHALL BE SUBMITTED TO THE CITY OF ISSAQUAH FOR REVIEW AND APPROVAL PRIOR TO SIGNIFICANT REVISIONS TO TESC MEASURES ARE NEEDED TO ADDRESS PROJECT PHASING OR CHANGED CONDITIONS.

B. FAILURE TO PROVIDE AND MAINTAIN APPROVED TESC FACILITIES AT CONSTRUCTION SITES IS CONSIDERED A VIOLATION OF THE PERMIT AND IS SUBJECT TO STOP WORK AND CODE VIOLATION PENALTIES.

6. OTHER POLLUTION CONTROL MEASURES

A. THE CONTRACTOR SHALL USE THE APPROPRIATE POLLUTION CONTROL MEASURES TO ENSURE THAT NO LIQUID PRODUCTS OR CONTAMINATED WATER (SUCH AS RUNOFF FROM CONCRETE SLURRY) ENTERS THE STORM DRAINAGE SYSTEM, SURFACE WATERS, OR OTHERWISE LEAVES THE PROJECT SITE.

5.0 RECORD DRAWINGS

1.1. CONTRACTORS SHALL MAINTAIN HAND DRAWN RED-LINES, FIELD NOTES AND PHOTOGRAPHS ("FIELD DOCUMENTATION") OF ALL IMPROVEMENTS AS THE WORK PROGRESSES. CONTRACTOR'S FIELD DOCUMENTATION SHALL BE MAINTAINED ONSITE AND SHALL BE AVAILABLE AT ALL TIMES FOR DSD REVIEW. THE DSD INSPECTOR WILL PERIODICALLY REVIEW THE CONTRACTOR'S FIELD DOCUMENTATION AND WILL STOP WORK IF THE CONTRACTOR IS NOT MAINTAINING ADEQUATE RECORDS.

1.2. CONTRACTORS SHALL CONTRACT WITH A PROFESSIONAL SURVEYOR LICENSED IN THE STATE OF WASHINGTON TO ACQUIRE ALL OF THE FIELD DATA REQUIRED TO CREATE THE RECORD DRAWINGS. THE CONTRACTOR'S SURVEYOR SHALL BE THE SURVEYOR OF RECORD FOR THE RECORD DRAWINGS. ALL FIELD LOCATIONS SHALL BE TIED TO AN EASILY MEASURED OBJECT IN THE FIELD SUCH AS LIGHT POLE, MANHOLE, CATCH BASIN, CURB HUB, ETC.

1.3. DEVELOPER SHALL CONTRACT WITH A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF WASHINGTON TO PREPARE THE RECORD DRAWINGS. THE RECORD DRAWINGS SHALL FOLLOW THE SAME GENERAL FORMAT AS THE APPROVED CONSTRUCTION DRAWINGS AND THEY SHALL CONSIST OF A CLEAN SET OF MYLAR PRINTS WITH ALL CONSTRUCTION NOTES REMOVED AND NO CROSS-OUTS. RECORD DRAWINGS SHALL BE GENERATED USING THE FOLLOWING INFORMATION:

1.3.1.CONTRACTOR SUPPLIED SURVEY INFORMATION

1.3.2. CONTRACTOR'S FIELD DOCUMENTATION.

1.3.3. ENGINEER'S FIELD DOCUMENTATION.

1.3.4. DSD INSPECTOR'S FIELD DOCUMENTATION.

1.3.5. FIELD CHANGES AND DESIGN CHANGES.

1.1.6.THE APPROVED CONSTRUCTION DRAWINGS.EACH SHEET OF THE RECORD DRAWINGS SHALL INCLUDE THE FOLLOWING STATEMENTS AND SHALL BE STAMPED AND SIGNED BY THE ENGINEER OF RECORD AND THE SURVEYOR OF RECORD:

1.1.1.THE SURVEYOR OF RECORD SHALL SIGN THE FOLLOWING STATEMENT ON EACH SHEET OF THE RECORD DRAWINGS:
"I _____ (THE SURVEYOR OF RECORD) HEREBY CERTIFY THAT THE SURVEY INFORMATION SHOWN ON THESE RECORD DRAWINGS ACCURATELY REFLECTS THE FIELD CONDITIONS AS OF _____."

1.1.2.THE ENGINEER OF RECORD SHALL SIGN THE FOLLOWING STATEMENT ON EACH SHEET OF THE RECORD DRAWINGS:
"I _____ (THE ENGINEER OF RECORD) HEREBY CERTIFY THAT THE FACILITIES SHOWN ON THESE RECORD DRAWINGS _____ MEET THE INTENT OF THE DESIGN.

THE INFORMATION SHOWN ON THESE RECORD DRAWINGS WAS COMPILED FROM THE FOLLOWING SOURCES: 1) SURVEY OF VISIBLE FEATURES, 2) CONTRACTOR NOTES, RED-LINES AND SURVEY DATA, 3) DSD INSPECTOR COMMENTS, AND 4) APPROVED CONSTRUCTION PLANS. THE ENGINEER OF RECORD CERTIFYING THESE RECORD DRAWINGS HAS NOT WITNESSED ALL ELEMENT OF CONSTRUCTION AND IS NOT RESPONSIBLE FOR ERRORS OR OMISSIONS IN DATA PROVIDED BY THE CONTRACTOR, THE DSD OR THE SURVEYOR OF RECORD."

5.0 RECORD DRAWINGS (CONT.)

1.1. SANITARY SEWER RECORD DRAWINGS SHALL INCLUDE THE FOLLOWING INFORMATION PLUS ANY ADDITIONAL INFORMATION THAT, BASED ON GOOD ENGINEERING PRACTICES AND THE SPECIFIC PROJECT FEATURES, THE ENGINEER OF RECORD FEELS IS WARRANTED:

1.1.1. SEWER PIPELINE PLAN AND PROFILES WITH PIPE MATERIAL, SIZE, LOCATION, SLOPE, AND LENGTH.

1.1.2.MANHOLE TYPE, SIZE, LOCATION, RIM ELEVATION, INVERT ELEVATIONS, AND DROP STRUCTURES FEATURES.

1.1.3.SIDE SEWER MATERIAL, SIZE, LOCATION, AND INVERT ELEVATION.

1.2. WATER RECORD DRAWINGS SHALL INCLUDE THE FOLLOWING INFORMATION PLUS ANY ADDITIONAL INFORMATION THAT, BASED ON GOOD ENGINEERING PRACTICES AND THE SPECIFIC PROJECT FEATURES, THE ENGINEER OF RECORD FEELS IS WARRANTED:

1.2.1.WATER PIPELINE PLAN WITH PIPE MATERIAL, SIZE, LOCATION AND LENGTH.

1.2.2. WATER VALVE TYPE, MANUFACTURE DATE, SIZE, INVERT ELEVATION AND LOCATION.

1.2.3. WATER FITTING TYPE, SIZE, INVERT ELEVATION, BLOCKING DIMENSION AND LOCATION.

1.2.4. WATER MAIN INVERT ELEVATIONS AT 50' SPACING FOR ALL PIPE INSTALLED AT A DEPTH GREATER THAN 5'.

1.2.5. TYPE AND LOCATION OF THRUST RESTRAIN SYSTEM.

1.2.6. FIRE HYDRANT LOCATION.

1.2.7. BLOW-OFF SIZE AND LOCATION.

1.2.8. AIR & VACUUM RELIEF VALVE SIZE AND LOCATION.

1.2.9. WATER METER SIZE AND LOCATION.

1.3. STORM RECORD DRAWINGS SHALL INCLUDE THE FOLLOWING INFORMATION PLUS ANY ADDITIONAL INFORMATION THAT, BASED ON GOOD ENGINEERING PRACTICES AND THE SPECIFIC PROJECT FEATURES, THE ENGINEER OF RECORD FEELS IS WARRANTED:

1.3.1.STORM PIPELINE PLAN AND PROFILES WITH PIPE MATERIAL, SIZE, LOCATION, SLOPE, AND LENGTH.

1.3.2. CATCH BASIN TYPE, SIZE, LOCATION, RIM ELEVATION, AND INVERT ELEVATIONS.

1.3.3. FLOW CONTROL STRUCTURE TYPE, SIZE, LOCATION, RIM ELEVATION, ORIFICE SIZE, OVERFLOW ELEVATIONS, ETC.

1.3.4. LOT DRAIN SIZE, LOCATION AND INVERT ELEVATION.

1.3.5. RETENTION/DETENTION SYSTEM PLAN AND PROFILES WITH VOLUME, OPERATING LEVELS, OVERFLOW ELEVATIONS, AND OTHER PERTINENT ENGINEERING AND OPERATIONAL FEATURES AND COMPONENTS.

1.4. ROADWAY RECORD DRAWINGS SHALL INCLUDE THE FOLLOWING INFORMATION PLUS ANY ADDITIONAL INFORMATION THAT, BASED ON GOOD ENGINEERING PRACTICES AND THE SPECIFIC PROJECT FEATURES, THE ENGINEER OF RECORD FEELS IS WARRANTED:

1.4.1.CENTERLINE PROFILE WITH ELEVATIONS AT INTERSECTIONS, PVI'S, BVC'S, AND EVC'S, INCLUDE VERTICAL CURVE DATA.

1.4.2. GUTTER LINE ELEVATIONS AT ¼ POINTS OF INTERSECTION RADIUS RETURNS, INCLUDE CURVE DATA, AND AT ROADWAY WIDTH TRANSITION POINTS.

1.4.3. CHANNELIZATION TYPE AND LOCATION.

1.4.4. SIGNAGE TYPE AND LOCATION.

1.4.5. ILLUMINATION TYPE AND LOCATION.

1.4.6. RIGHT-OF-WAY MONUMENTATION

6.0 SITE SAFETY

1.1. CONTRACTORS SHALL COMPLY WITH ALL APPLICABLE LOCAL, STATE AND FEDERAL AGENCY SAFETY STANDARDS.

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APPROVAL CONDITIONS

BY DATE

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☐ Reviewed & Determined to be not applicable	☐ Reviewed & Determined to be not applicable
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DSD Program Manager Date

Public Works Engr Director Date

ONLY SHEETS WITH AUTHORIZING SIGNATURES HAVE BEEN APPROVED FOR CONSTRUCTION

NO.	REVISIONS	DATE

08-11-16

CORE DESIGN
14711 NE 29th Place Suite 101
Bellevue, Washington 98007
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GENERAL NOTES
5655 221ST STREET - ISSAQUAH
DUDLEY SMILES
4127 93RD PLACE SE
MERCER ISLAND, WA 98040

DATE	MAY 2016
DESIGNED	STACIA BLOOM, PE
DRAWN	LISA JOHNSON
APPROVED	STACIA BLOOM, PE
	KEVIN VANDERZANDEN, PLS PROJECT MANAGER

SHEET C1.02 OF 10

PROJECT NUMBER 14047D

BASIS OF BEARINGS

THE EAST-WEST CENTER-OF-SECTION LINE OF SECTION 21, TOWNSHIP 24 NORTH, RANGE 6 EAST, W.M., USING KING COUNTY SURVEY CONTROL POINT ID 1818, THE EAST QUARTER CORNER OF SECTION 21, TO KING COUNTY SURVEY CONTROL POINT 1968 ON THE CENTERLINE OF SE 56TH STREET AND SAID EAST-WEST CENTER-OF-SECTION LINE, TAKEN AS NORTH 88°29'50" WEST

LEGAL DESCRIPTION

LOT 4 OF JAMES BUSH ADDITION, AS PER PLAT RECORDED IN VOLUME 44 OF PLATS, PAGE 45, RECORDS OF KING COUNTY; SITUATE IN THE CITY OF ISSAQUAH, COUNTY OF KING, STATE OF WASHINGTON.

REFERENCES

1. CITY OF ISSAQUAH LOT LINE ADJUSTMENT, RECORDING NO. 20131150000003, RECORDS OF KING COUNTY, WA.

NOTES

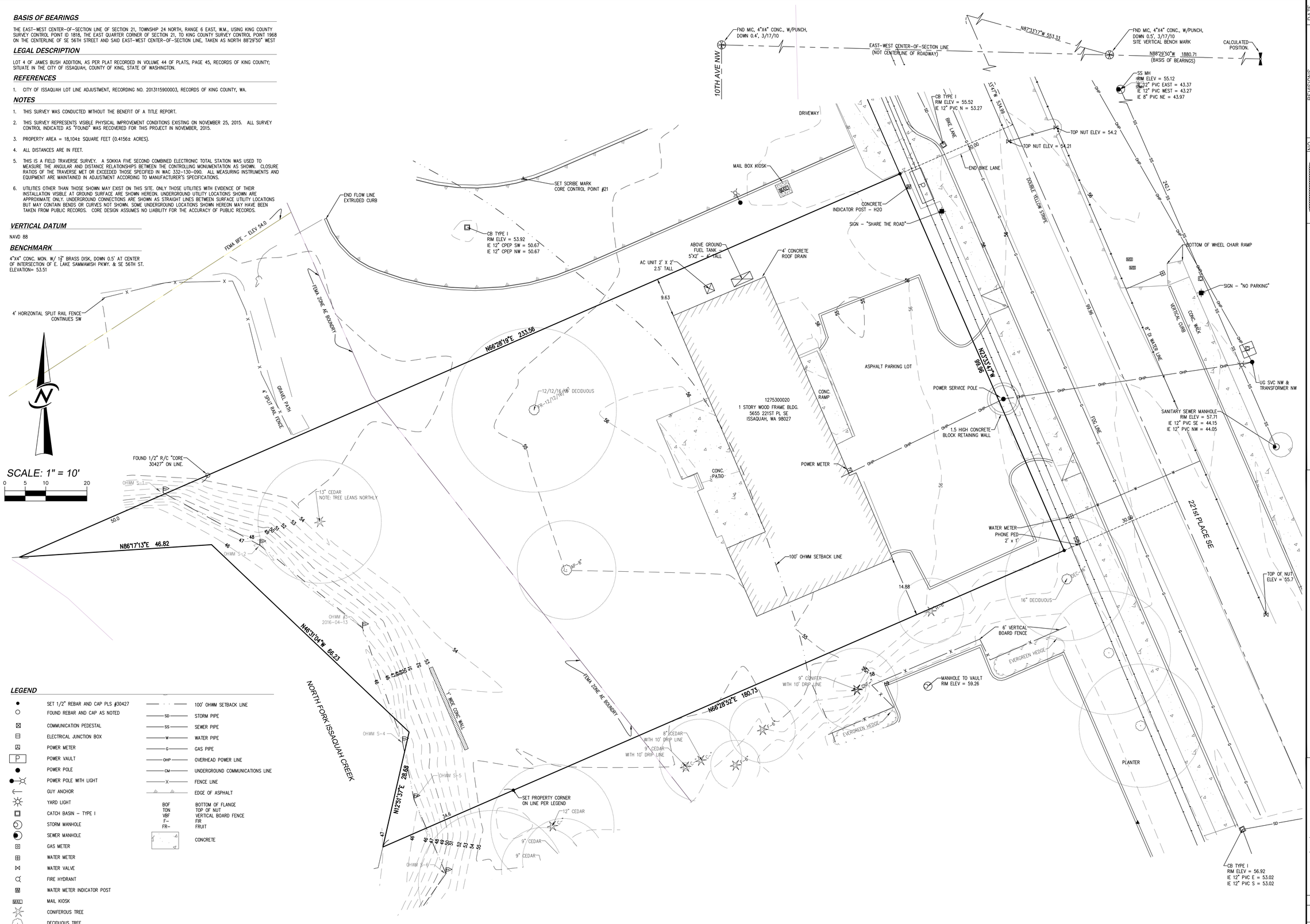
1. THIS SURVEY WAS CONDUCTED WITHOUT THE BENEFIT OF A TITLE REPORT.
2. THIS SURVEY REPRESENTS VISIBLE PHYSICAL IMPROVEMENT CONDITIONS EXISTING ON NOVEMBER 25, 2015. ALL SURVEY CONTROL INDICATED AS "FOUND" WAS RECOVERED FOR THIS PROJECT IN NOVEMBER, 2015.
3. PROPERTY AREA = 18,104± SQUARE FEET (0.4156± ACRES).
4. ALL DISTANCES ARE IN FEET.
5. THIS IS A FIELD TRAVERSE SURVEY. A SOKKIA FIVE SECOND COMBINED ELECTRONIC TOTAL STATION WAS USED TO MEASURE THE ANGULAR AND DISTANCE RELATIONSHIPS BETWEEN THE CONTROLLING MONUMENTATION AS SHOWN. CLOSURE RATIOS OF THE TRAVERSE MET OR EXCEEDED THOSE SPECIFIED IN WAC 332-130-090. ALL MEASURING INSTRUMENTS AND EQUIPMENT ARE MAINTAINED IN ADJUSTMENT ACCORDING TO MANUFACTURER'S SPECIFICATIONS.
6. UTILITIES OTHER THAN THOSE SHOWN MAY EXIST ON THIS SITE. ONLY THOSE UTILITIES WITH EVIDENCE OF THEIR INSTALLATION VISIBLE AT GROUND SURFACE ARE SHOWN HEREON. UNDERGROUND UTILITY LOCATIONS SHOWN ARE APPROXIMATE ONLY. UNDERGROUND CONNECTIONS ARE SHOWN AS STRAIGHT LINES BETWEEN SURFACE UTILITY LOCATIONS BUT MAY CONTAIN BENDS OR CURVES NOT SHOWN. SOME UNDERGROUND LOCATIONS SHOWN HEREON MAY HAVE BEEN TAKEN FROM PUBLIC RECORDS. CORE DESIGN ASSUMES NO LIABILITY FOR THE ACCURACY OF PUBLIC RECORDS.

VERTICAL DATUM

NAVD 88

BENCHMARK

4"X4" CONC. MON. W/ 1½" BRASS DISK, DOWN 0.5' AT CENTER OF INTERSECTION OF E. LAKE SAMMAMISH PKWY. & SE 56TH ST.
ELEVATION= 53.51



LEGEND

●	SET 1/2" REBAR AND CAP PLS #30427	— · · —	100' OHWM SETBACK LINE
○	FOUND REBAR AND CAP AS NOTED	—SD—	STORM PIPE
⊠	COMMUNICATION PEDESTAL	—SS—	SEWER PIPE
⊟	ELECTRICAL JUNCTION BOX	—W—	WATER PIPE
	POWER METER	—G—	GAS PIPE
P	POWER VAULT	—OHP—	OVERHEAD POWER LINE
●	POWER POLE	—CM—	UNDERGROUND COMMUNICATIONS LINE
	POWER POLE WITH LIGHT	—X—	FENCE LINE
	GUY ANCHOR		EDGE OF ASPHALT
	YARD LIGHT	BOF	BOTTOM OF FLANGE
	CATCH BASIN - TYPE I	TON	TOP OF NUT
	STORM MANHOLE	VBF	VERTICAL BOARD FENCE
	SEWER MANHOLE	F-	FIR
	GAS METER	FR-	FRUIT
	WATER METER		CONCRETE
	WATER VALVE		
	FIRE HYDRANT		
	WATER METER INDICATOR POST		
MAIL	MAIL KIOSK		
	CONIFEROUS TREE		
	DECIDUOUS TREE		

NO.	REVISIONS	DATE

12-17-15

CORE DESIGN
14711 NE 29th Place, #101
Bellevue, Washington 98007
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BOUNDARY & TOPOGRAPHIC SURVEY
5655 221ST STREET - ISSAQUAH
SILAS DUDLEY
4127 93RD PLACE SE
MERCER ISLAND, WA 98040

DATE 12/09/2015
DESIGNED
DRAWN PAY
APPROVED KJV
KEVIN VANDERZANDEN, PLS
PROJECT MANAGER

SHEET C1.03 OF 8

PROJECT NUMBER 14047D

CONSTRUCTION SEQUENCE

1. PRIOR TO ANY CONSTRUCTION ACTIVITY, THE CONTRACTOR SHALL SCHEDULE AND ATTEND A PRE-CONSTRUCTION CONFERENCE WITH (BUT NOT LIMITED TO) THE CITY, OWNER, CONTRACTOR, SUBCONTRACTORS AND CONSTRUCTION INSPECTION PERSONNEL.
2. FLAG THE LIMITS OF CLEARING, TREES TO BE DEMO'D, TREES TO TO BE SAVED, AND INSTALL FENCES (SILT FENCING & TREE PROTECTION), WHERE INDICATED ON PLANS.
3. CONSTRUCT THE TEMPORARY CONSTRUCTION EXIT.
4. BEGIN DEMOLITION & ROUGH ROAD GRADING.
5. CONSTRUCT STORM DRAINAGE FACILITIES, INCLUDING SWALES, CHECK DAMS, PONDS, AND CATCH BASINS. PROTECT THESE FACILITIES FROM DAMAGE AND SILTATION DURING CONSTRUCTION. INSTALL CB INLET PROTECTION.
6. CONSTRUCT THE SEWER & WATER FACILITIES PER THE APPROVED PLANS. PROTECT THESE FACILITIES FROM DAMAGE DURING ON-GOING CONSTRUCTION.
7. CONSTRUCT THE REMAINING UNDERGROUND UTILITIES.
8. HYDROSEED ANY REMAINING DISTURBED SURFACES. INSTALL PLANTING ASSOCIATED WITH THE MITIGATION PLAN. REMOVE ALL TEMPORARY FACILITIES. PUMP ANY COLLECTED DEBRIS FROM STORM DRAINAGE SYSTEM.

EROSION CONTROL NOTES

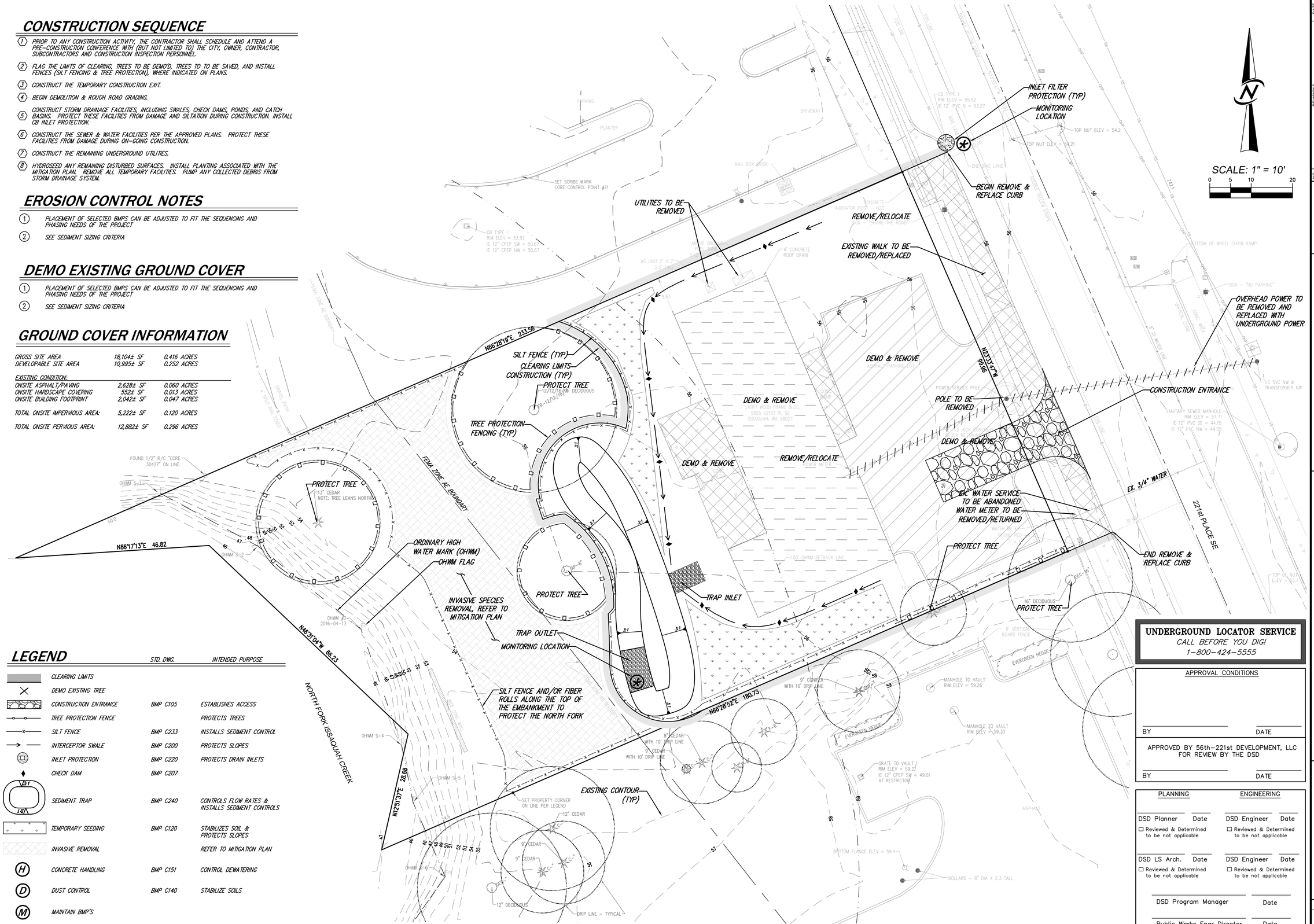
1. PLACEMENT OF SELECTED BMPS CAN BE ADJUSTED TO FIT THE SEQUENCING AND PHASING NEEDS OF THE PROJECT
2. SEE SEDIMENT SIZING CRITERIA

DEMO EXISTING GROUND COVER

1. PLACEMENT OF SELECTED BMPS CAN BE ADJUSTED TO FIT THE SEQUENCING AND PHASING NEEDS OF THE PROJECT
2. SEE SEDIMENT SIZING CRITERIA

GROUND COVER INFORMATION

GROSS SITE AREA	18,104± SF	0.416 ACRES
DEVELOPABLE SITE AREA	10,995± SF	0.252 ACRES
EXISTING CONDITION:		
ONSITE ASPHALT/PAVING	2,628± SF	0.060 ACRES
ONSITE HARDSCAPE COVERING	552± SF	0.013 ACRES
ONSITE BUILDING FOOTPRINT	2,042± SF	0.047 ACRES
TOTAL ONSITE IMPERVIOUS AREA:	5,222± SF	0.120 ACRES
TOTAL ONSITE PERVIOUS AREA:	12,882± SF	0.296 ACRES



LEGEND

	STD. DWG.	INTENDED PURPOSE
CLEARING LIMITS		
DEMO EXISTING TREE		
CONSTRUCTION ENTRANCE	BMP C105	ESTABLISHES ACCESS
TREE PROTECTION FENCE		PROTECTS TREES
SILT FENCE	BMP C233	INSTALLS SEDIMENT CONTROL
INTERCEPTOR SWALE	BMP C200	PROTECTS SLOPES
INLET PROTECTION	BMP C220	PROTECTS DRAIN INLETS
CHECK DAM	BMP C207	
SEDIMENT TRAP	BMP C240	CONTROLS FLOW RATES & INSTALLS SEDIMENT CONTROLS
TEMPORARY SEEDING	BMP C120	STABILIZES SOIL & PROTECTS SLOPES
INVASIVE REMOVAL		REFER TO MITIGATION PLAN
(H) CONCRETE HANDLING	BMP C151	CONTROL DEWATERING
(D) DUST CONTROL	BMP C140	STABILIZE SOILS
(M) MAINTAIN BMP'S		
(*) MONITORING LOCATIONS		

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DSD Program Manager Date	
Public Works Engr Director Date	

ONLY SHEETS WITH AUTHORIZING SIGNATURES HAVE BEEN APPROVED FOR CONSTRUCTION

DATE | REVISIONS | NO.

CB-11-16

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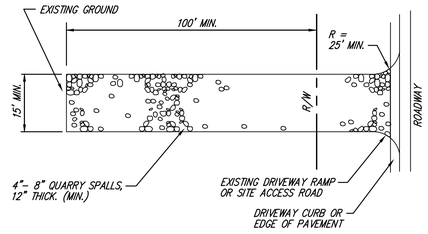
EROSION CONTROL
5655 221ST STREET - ISSAQUAH
DUDLEY SMILES
4127 93RD PLACE SE
MERCER ISLAND, WA 98040

DATE	MAY 2016
DESIGNED	STACIA BLOOM, PE
DRAWN	LISA JOHNSON
APPROVED	STACIA BLOOM, PE
	KEVIN VANDERZANDEN, PLS PROJECT MANAGER

SHEET C2.01 OF 10

PROJECT NUMBER 14047D

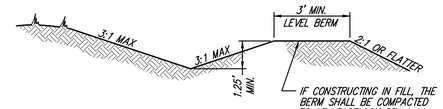
5/12/2016 4:41 PM,\\2014\14047D\ENGINEERING\FINAL\SHEETS\C2.01.DWG



1. USE 4" TO 8" QUARRY SPALLS OR CRUSHED ROCK FOR SURFACING AS SHOWN. MATERIAL WITH "FINES" IS NOT ACCEPTABLE.
2. THE 100' MINIMUM LENGTH SHALL BE LENGTHENED AS NECESSARY TO INSURE MATERIAL IS NOT TRACKED INTO THE PUBLIC RIGHT-OF-WAY.

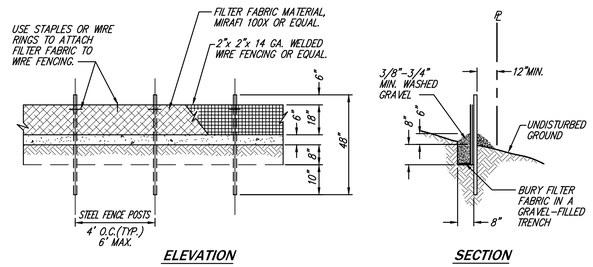
CONSTRUCTION ENTRANCE DETAIL

NO SCALE



INTERCEPTOR SWALE DETAIL

NO SCALE

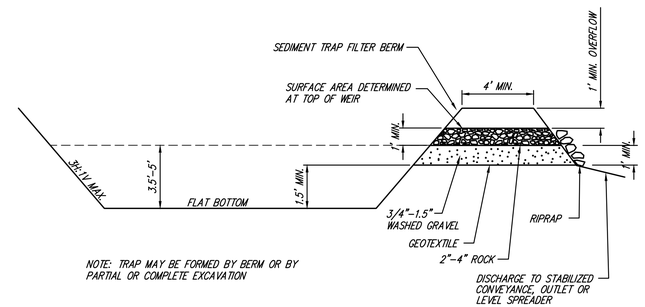


ELEVATION

SECTION

SILT FENCE DETAIL

NO SCALE

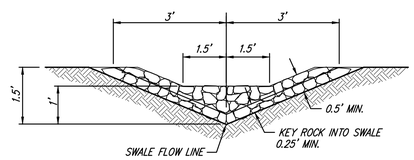


SEDIMENT TRAP SECTION

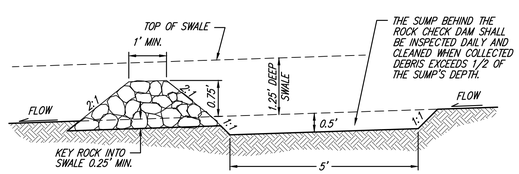
NO SCALE

SEDIMENT TRAP DIMENSIONS:

DRAINAGE MANAGEMENT AREA	=	0.252 ACRES
BERM ELEVATION	=	55.98
BOTTOM ELEVATION	=	52.48
POND AREA (DRY SEASON)	=	680 SQFT
POND AREA (WET SEASON)	=	1,073 SQFT



INTERCEPTOR SWALE CROSS-SECTION & ROCK CHECK DAM

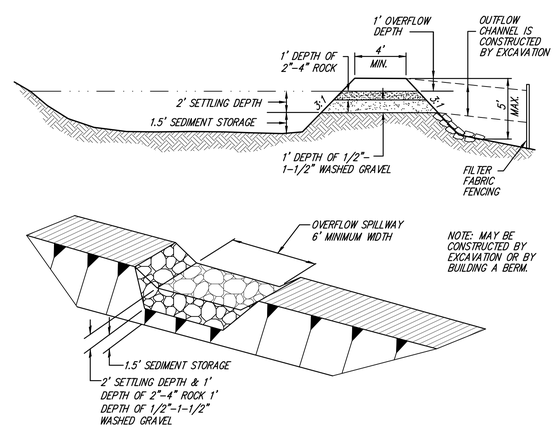


NOTE: ROCK SHALL BE 4" MINUS QUARRY ROCK.

ROCK CHECK DAM CROSS-SECTION

ROCK CHECK DAM

NO SCALE



SEDIMENT TRAP OUTLET

NO SCALE

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Public Works Engr Director Date

ONLY SHEETS WITH AUTHORIZING SIGNATURES HAVE BEEN APPROVED FOR CONSTRUCTION

NO.	REVISIONS	DATE

CORE DESIGN
14711 NE 29th Place Suite 101
Bellevue, Washington 98007
425.885.7877 Fax 425.885.7963
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CB-11-16

EROSION CONTROL DETAILS
5655 221ST STREET - ISSAQUAH
DUDLEY SMILES
4127 93RD PLACE SE
MERCER ISLAND, WA 98040

DATE	MAY 2016
DESIGNED	STACIA BLOOM, PE
DRAWN	LISA JOHNSON
APPROVED	STACIA BLOOM, PE
KEVIN VANDERZANDEN, PLS, PROJECT MANAGER	

SHEET	OF
C2.02	10

PROJECT NUMBER 14047D

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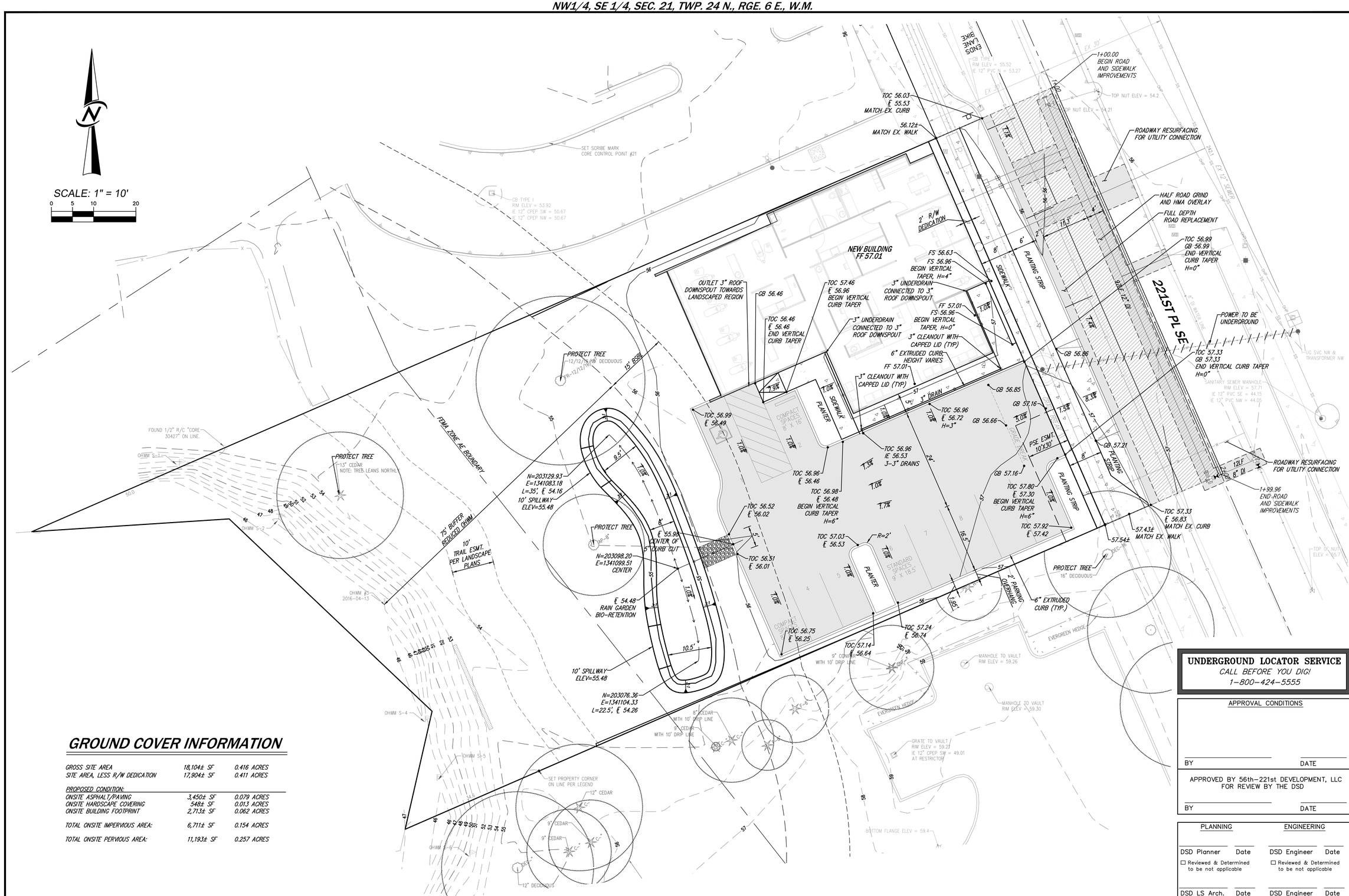

GROUND COVER INFORMATION

GROSS SITE AREA	18,104± SF	0.416 ACRES
SITE AREA, LESS R/W DEDICATION	17,904± SF	0.411 ACRES
PROPOSED CONDITION:		
ONSITE ASPHALT/PAVING	3,450± SF	0.079 ACRES
ONSITE HARDSCAPE COVERING	548± SF	0.013 ACRES
ONSITE BUILDING FOOTPRINT	2,713± SF	0.062 ACRES
TOTAL ONSITE IMPERVIOUS AREA:	6,711± SF	0.154 ACRES
TOTAL ONSITE PERVIOUS AREA:	11,193± SF	0.257 ACRES

UNDERGROUND LOCATOR SERVICE
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APPROVAL CONDITIONS

BY DATE

APPROVED BY 56th-221st DEVELOPMENT, LLC
FOR REVIEW BY THE DSD

BY DATE

PLANNING	ENGINEERING
DSD Planner Date	DSD Engineer Date
☐ Reviewed & Determined to be not applicable	☐ Reviewed & Determined to be not applicable
DSD LS Arch. Date	DSD Engineer Date
☐ Reviewed & Determined to be not applicable	☐ Reviewed & Determined to be not applicable
DSD Program Manager Date	
Public Works Engr Director Date	

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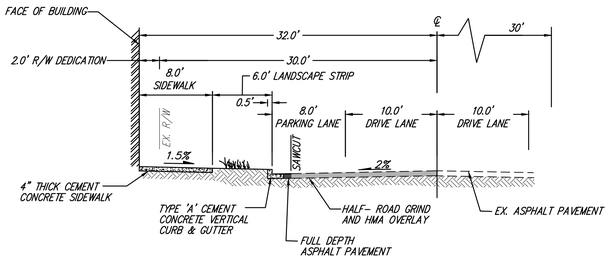
GRADING AND STORM PLAN
5655 221ST STREET - ISSAQUAH
DUDLEY SMILES
4127 93RD PLACE SE
MERCER ISLAND, WA 98040

DATE	MAY 2016
DESIGNED	STACIA BLOOM, PE
DRAWN	LISA JOHNSON
APPROVED	STACIA BLOOM, PE
	KEVIN VANDERZANDEN, PLS — PROJECT MANAGER

SHEET	OF
C3.01	10

PROJECT NUMBER
14047D

5/17/2016 9:21 AM \\2014\14047D\ENGINEERING\FINAL\SHEETS\C3.01.DWG

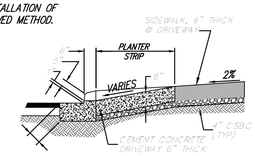


ROAD SECTION - 221ST PL. S.E. ROADWAY SECTION

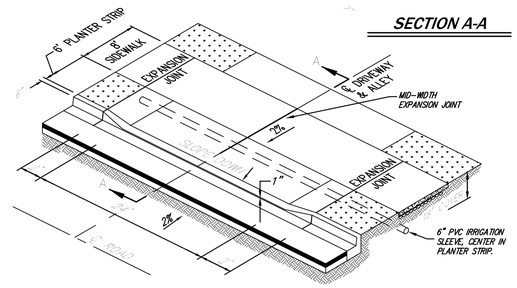
NO SCALE

CURB RAMP NOTES:

1. AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS.
2. DETECTABLE WARNING PATTERNS SHALL BE CREATED BY INSTALLATION OF CAST-IN-PLACE, MODULAR SYSTEM, OR OTHER MDRT APPROVED METHOD.
3. RAMP SLOPES SHALL NOT BE GREATER THAT 12H:1V.

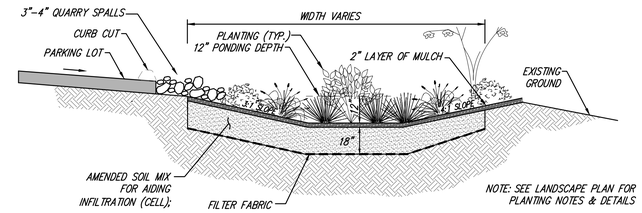


SECTION A-A



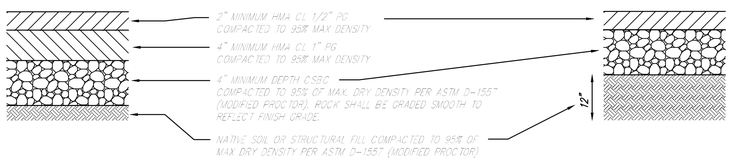
DRIVEWAY DETAIL

NO SCALE



RAIN GARDEN - BIO-RETENTION

NO SCALE

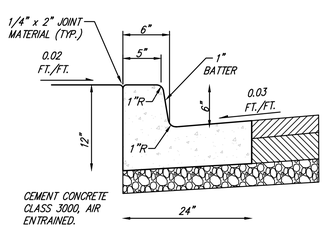


ROADWAY SURFACING SECTION

NO SCALE

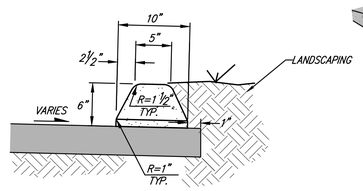
PARKING SURFACING SECTION

NO SCALE



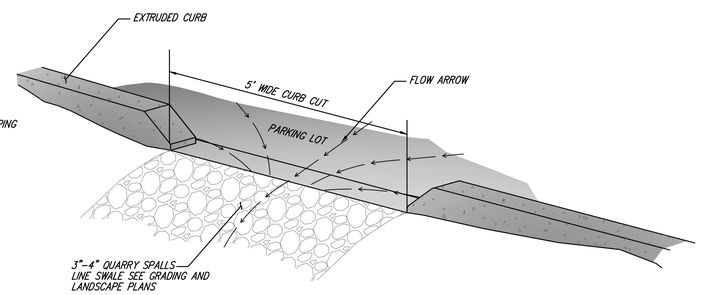
TYPE 'A' VERTICAL CURB AND GUTTER DETAIL

NO SCALE



EXTRUDED CONCRETE CURB

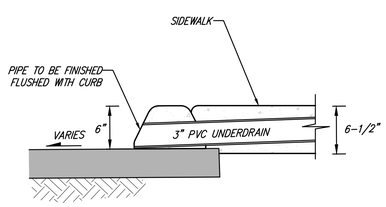
NO SCALE



CURB CUT DETAIL

SEE SHEET C3.01

NO SCALE



SIDEWALK UNDERDRAIN

NO SCALE

SIDEWALK CLENAOUT

NO SCALE

SIDEWALK CAPPED LID

NO SCALE

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APPROVAL CONDITIONS

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DSD Program Manager — Date

Public Works Engr Director — Date

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DATE | NO. | REVISIONS

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ROAD AND STORM DETAILS
5655 221ST STREET - ISSAQUAH
DUDLEY SMILES
4127 93RD PLACE SE
MERCER ISLAND, WA 98040

DATE	MAY 2016
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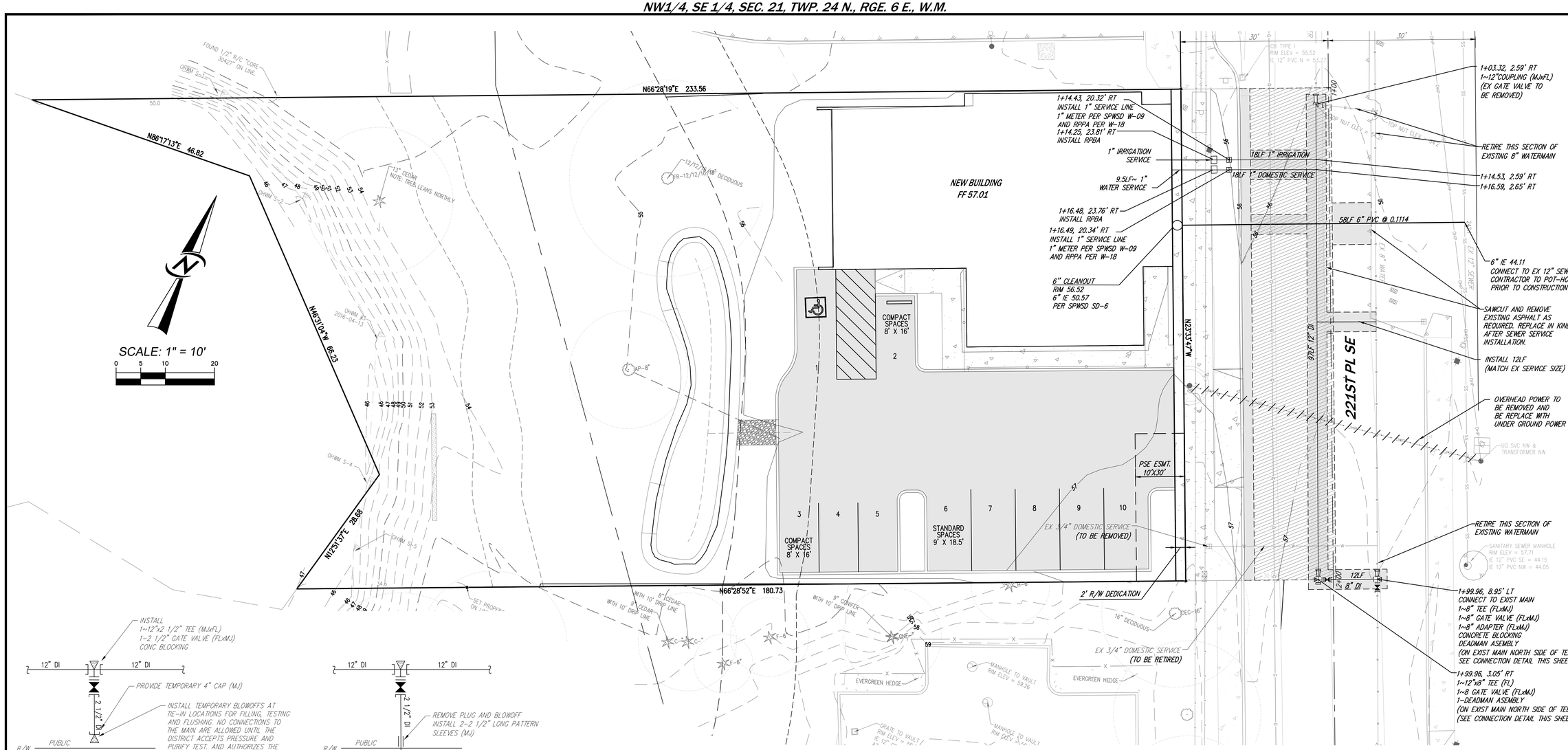
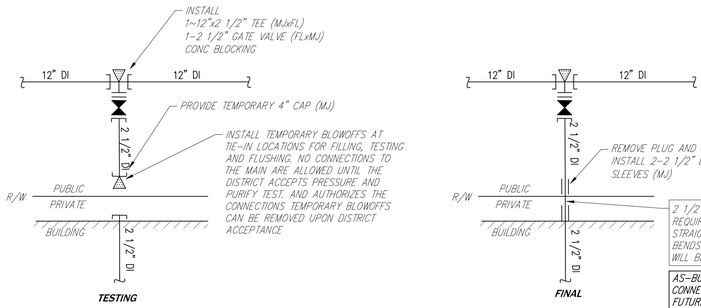
APPROVED	STACIA BLOOM, PE
	KEVIN VANDERZANDEN, PLS — PROJECT MANAGER

SHEET C3.31 OF 10

PROJECT NUMBER 14047D

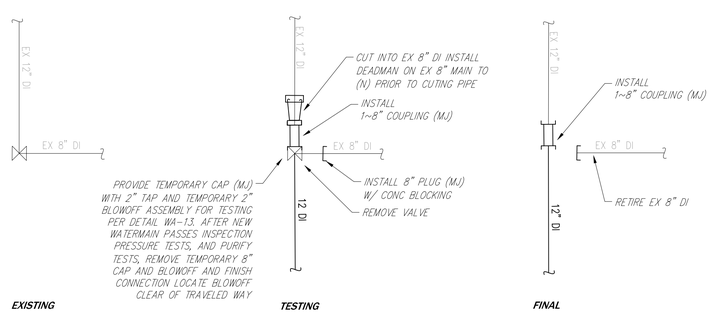




AS-BUILT NOTE: THIS FINAL CONNECTION DETAIL OF FOR THE FUTURE CONNECTION TO THE BUILDING AT WAS NOT DONE AS PART OF THIS PROJECT

DCDA WATER CONNECTION DEATIL

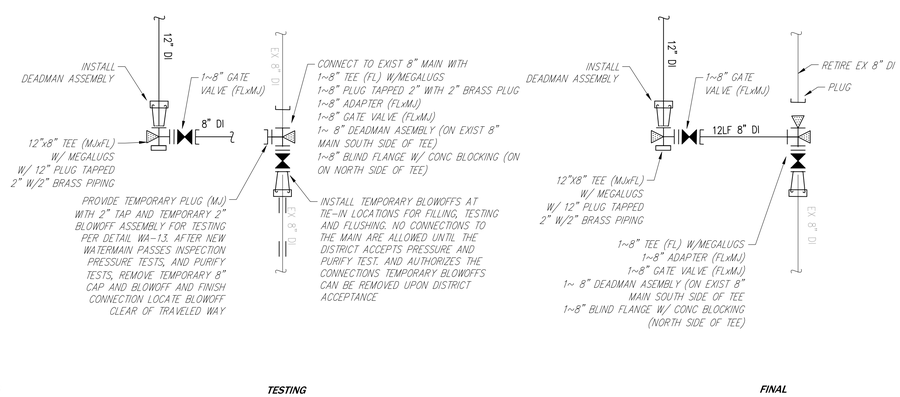
NO SCALE



SCHEDULE WITH THE DISTRICT (72 HOURS MIN. NOTICE) FOR WATERMAIN SHUTDOWN ON 221ST PL SE. INSTALL DISTRICT STANDARDS TESTING CONNECTION ON NEW WATERMAIN. FOLLOWING COMPLETION OF THE NEW WATER SYSTEM CONSTRUCTION., TESTING AND ACCEPTANCE BY THE DISTRICT, REMOVE TESTING CONNECTION AND INSTALL SEGMENT IF DI PIPE , LENGTH TO SUIT, WITH TWO LONG PATTERN SLEVES. INSTALLATION AND CONNECTION TO EXISTING WATER SYSTEM SHALL BE WITH 100% DISTRICT INSPECTION.

NORTH WATER MAIN CONNECTION DETAIL

NO SCALE



SOUTH WATER MAIN CONNECTION DETAIL

NO SCALE

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APPROVAL CONDITIONS

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Public Works Engr Director	Date		

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UTILITY PLAN
5655 221ST STREET - ISSAQUAH
DUDLEY SMILES
4127 93RD PLACE SE
MERCER ISLAND, WA 98040

DATE	MAY 2016
DESIGNED	STACIA BLOOM, PE
DRAWN	LISA JOHNSON
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	KEVIN VANDERZANDEN, PLS PROJECT MANAGER

SHEET	OF
C5.01	10

PROJECT NUMBER 14047D

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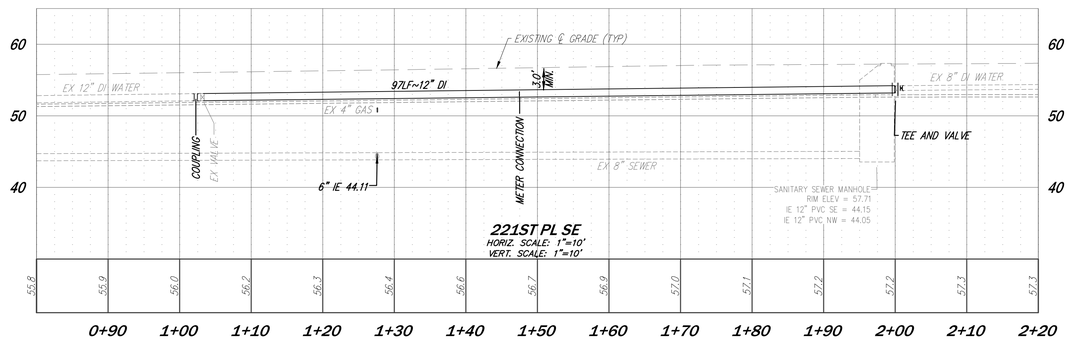

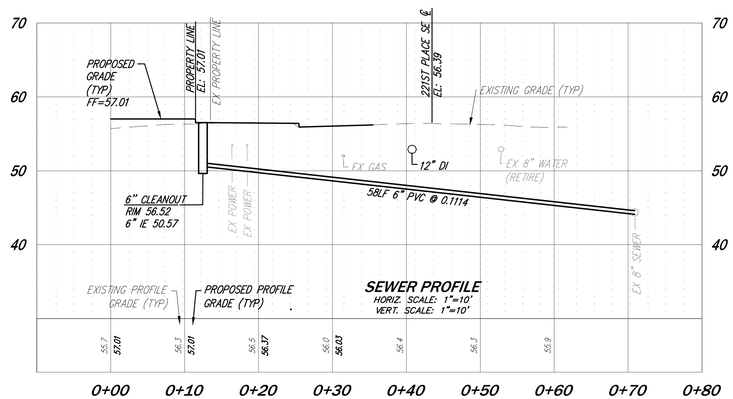

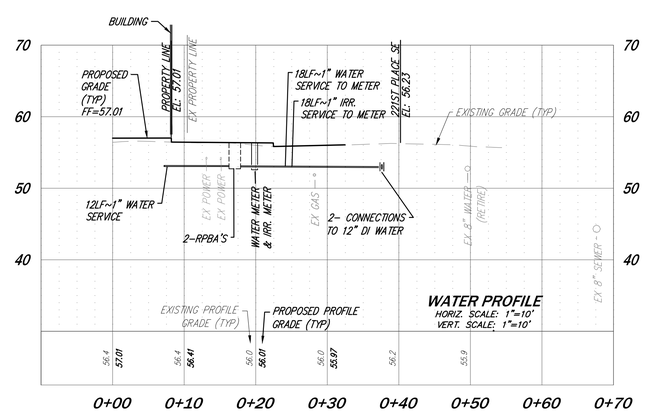

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Public Works Engr Director Date

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UTILITY PROFILES
5655 221ST STREET - ISSAQUAH
DUDLEY SMILES
4127 93RD PLACE SE
MERCER ISLAND, WA 98040

DATE	MAY 2016
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APPROVED	STACIA BLOOM, PE
	KEVIN VANDERZANDEN, PLS — PROJECT MANAGER

SHEET C5.20 OF 10

PROJECT NUMBER 14047D

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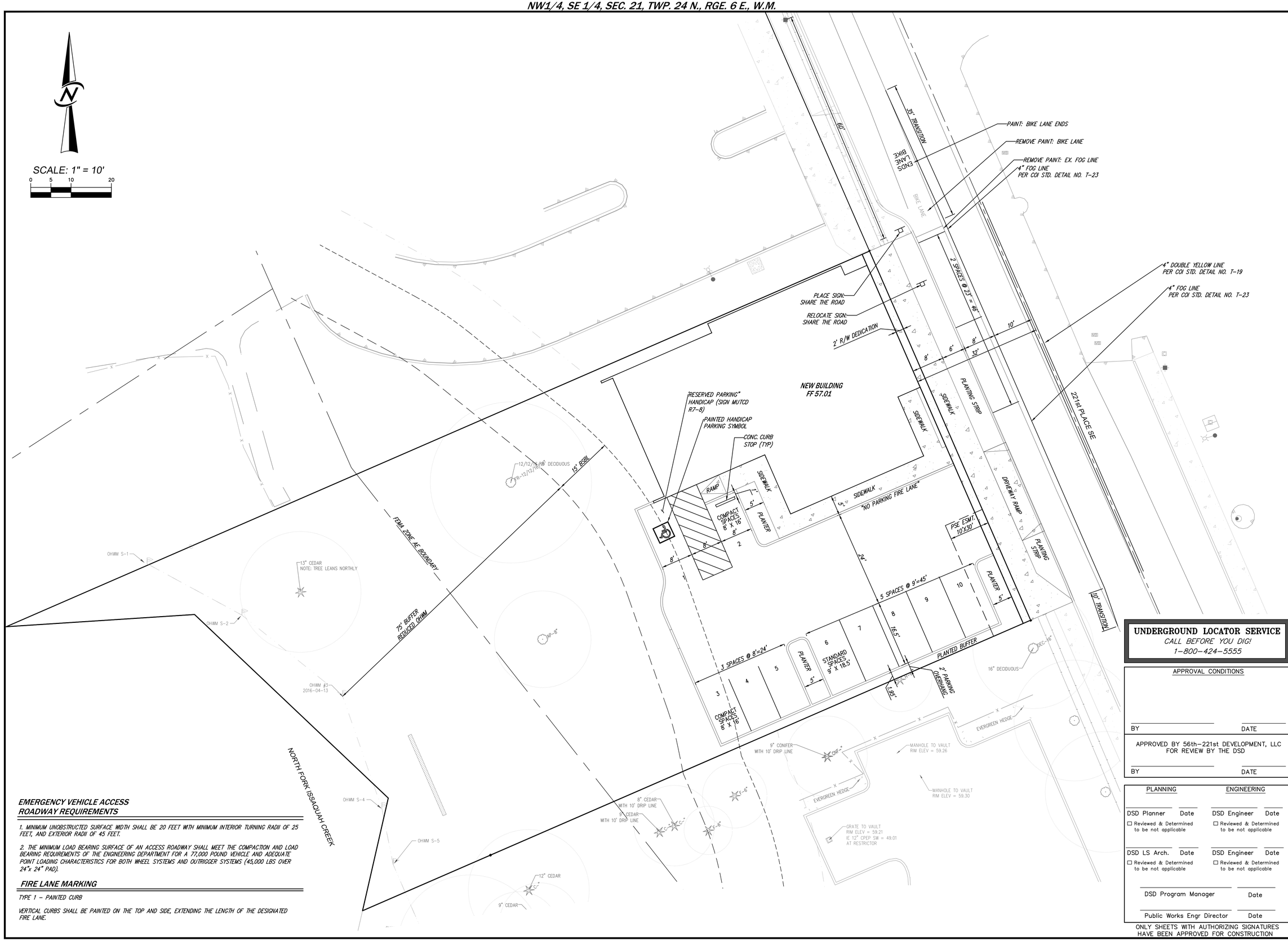
NW1/4, SE 1/4, SEC. 21, TWP. 24 N., RGE. 6 E., W.M.



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☐ Reviewed & Determined to be not applicable		☐ Reviewed & Determined to be not applicable	
DSD Program Manager		Date	
Public Works Engr Director		Date	

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EMERGENCY VEHICLE ACCESS ROADWAY REQUIREMENTS

1. MINIMUM UNOBSTRUCTED SURFACE WIDTH SHALL BE 20 FEET WITH MINIMUM INTERIOR TURNING RADII OF 25 FEET, AND EXTERIOR RADII OF 45 FEET.

2. THE MINIMUM LOAD BEARING SURFACE OF AN ACCESS ROADWAY SHALL MEET THE COMPACTION AND LOAD BEARING REQUIREMENTS OF THE ENGINEERING DEPARTMENT FOR A 77,000 POUND VEHICLE AND ADEQUATE POINT LOADING CHARACTERISTICS FOR BOTH WHEEL SYSTEMS AND OUTRIGGER SYSTEMS (45,000 LBS OVER 24"x 24" PAD).

FIRE LANE MARKING

TYPE 1 - PAINTED CURB

VERTICAL CURBS SHALL BE PAINTED ON THE TOP AND SIDE, EXTENDING THE LENGTH OF THE DESIGNATED FIRE LANE.

NO.	REVISIONS	DATE

05-11-16

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Bellevue, Washington 98007
425.885.7877 Fax 425.885.7963
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SIGNAL AND STRIPING PLAN
5655 221ST STREET - ISSAQUAH
DUDLEY SMILES
4127 93RD PLACE SE
MERCER ISLAND, WA 98040

DATE	MAY 2016
DESIGNED	STACIA BLOOM, PE
DRAWN	LISA JOHNSON
APPROVED	STACIA BLOOM, PE
	KEVIN VANDERZANDEN, PLS PROJECT MANAGER

SHEET	OF
C7.01	10

PROJECT NUMBER 14047D

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ISSAQUAH 5655-221ST DUDLEY SMILES

DUDLEY SMILES

LANDSCAPE PLANS

KEY MAP

SCALE: 1" = 500'

SITE INFORMATION

DEVELOPER/OWNER	SILAS DUDELY 4127 – 93RD PLACE SE MERCER ISLAND, WA 98040 (206) 992–5098
LANDSCAPE ARCHITECT	CORE DESIGN, INC. 14711 N.E. 29TH PL. SUITE 101 BELLEVUE, WA 98007 (425) 885–7877 CONTACT: JOSHUA P. BEARD, PLA
ECOLOGIST	C. GARY SCHULZ, INC. 7700 S. LAKERIDGE DR. SEATTLE, WA 98178 206–920–5489
DRAINAGE BASIN	NORTH FORK ISSAQUAH CREEK FREEGARD SUB–BASIN
ACREAGE	18,104± = 0.416 ACRES
ASSESSOR'S PARCEL NUMBER(S)	1275300020
WATER DISTRICT	SAMMAMISH PLATEAU WATER DISTRICT
SETBACKS FRONT SIDE REAR	 0 FT 0 FT 0 FT
PARKING PROVIDED	9 STALLS + 1 ADA STALL = 10 STALLS TOTAL

LEGAL DESCRIPTION

LOT 4 OF JAMES BUSH ADDITION, AS PER PLAT RECORDED IN VOLUME 44 OF PLATS, PAGE 45, RECORDS OF KING COUNTY;
SITUATE IN THE CITY OF ISSAQUAH, COUNTY OF KING, STATE OF WASHINGTON.

REFERENCES

1. CITY OF ISSAQUAH LOT LINE ADJUSTMENT, RECORDING NO. 20131159000003, RECORDS OF KING COUNTY, WA.

REFERENCES

1. THIS SURVEY WAS CONDUCTED WITHOUT THE BENEFIT OF A TITLE REPORT.
2. THIS SURVEY REPRESENTS VISIBLE PHYSICAL IMPROVEMENT CONDITIONS EXISTING ON NOVEMBER 25, 2015. ALL SURVEY CONTROL INDICATED AS "FOUND" WAS RECOVERED FOR THIS PROJECT IN NOVEMBER, 2015.
3. PROPERTY AREA = 18,104± SQUARE FEET (0.4156± ACRES).
4. ALL DISTANCES ARE IN FEET.
5. THIS IS A FIELD TRAVERSE SURVEY. A SOKKIA FIVE SECOND COMBINED ELECTRONIC TOTAL STATION WAS USED TO MEASURE THE ANGULAR AND DISTANCE RELATIONSHIPS BETWEEN THE CONTROLLING MONUMENTATION AS SHOWN. CLOSURE RATIOS OF THE TRAVERSE MET OR EXCEEDED THOSE SPECIFIED IN WAC 332–130–090. ALL MEASURING INSTRUMENTS AND EQUIPMENT ARE MAINTAINED IN ADJUSTMENT ACCORDING TO MANUFACTURER'S SPECIFICATIONS.
6. UTILITIES OTHER THAN THOSE SHOWN MAY EXIST ON THIS SITE. ONLY THOSE UTILITIES WITH EVIDENCE OF THEIR INSTALLATION VISIBLE AT GROUND SURFACE ARE SHOWN HEREON. UNDERGROUND UTILITY LOCATIONS SHOWN ARE APPROXIMATE ONLY. UNDERGROUND CONNECTIONS ARE SHOWN AS STRAIGHT LINES BETWEEN SURFACE UTILITY LOCATIONS BUT MAY CONTAIN BENDS OR CURVES NOT SHOWN. SOME UNDERGROUND LOCATIONS SHOWN HEREON MAY HAVE BEEN TAKEN FROM PUBLIC RECORDS. CORE DESIGN ASSUMES NO LIABILITY FOR THE ACCURACY OF PUBLIC RECORDS.

BASIS OF BEARINGS

THE EAST–WEST CENTER–OF–SECTION LINE OF SECTION 21, TOWNSHIP 24 NORTH, RANGE 6 EAST, W.M., USING KING COUNTY SURVEY CONTROL POINT ID 1818, THE EAST QUARTER CORNER OF SECTION 21, TO KING COUNTY SURVEY CONTROL POINT 1968 ON THE CENTERLINE OF SE 56TH STREET AND SAID EAST–WEST CENTER–OF–SECTION LINE, TAKEN AS NORTH 88°29'50" WEST

VERTICAL DATUM

NAVD 88

BENCHMARK

4"X4" CONC. MON. W/ 11/2" BRASS DISK, DOWN 0.5' AT CENTER OF INTERSECTION OF E. LAKE SAMMAMISH PKWY. & SE 56TH ST.
ELEVATION= 53.51

SHEET INDEX

L1.01 COVER SHEET
L2.01 LANDSCAPE PLAN
L2..02 LANDSCAPE NOTES & SCHEDULE
L2.31 LANDSCAPE DETAILS
L3.01 IRRIGATION PLAN
L3.02 IRRIGATION NOTES & SCHEDULE
L3.31 IRRIGATION DETAILS
L4.01 MITIGATION PLAN
L4.02 MITIGATION NOTES & SCHEDULE
L4.31 MITIGATION DETAILS

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DSD Program Manager Date

Public Works Engr Director Date

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STATE OF WASHINGTON REGISTERED LANDSCAPE ARCHITECT
JOSHUA PENNINGTON BEARD
CERTIFICATE NO. 938

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Bellevue, Washington 98007
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COVER SHEET
5655 221ST STREET - ISSAQUAH
DUDLEY SMILES
4127 93RD PLACE SE
MERCER ISLAND, WA 98040

DATE MAY 2016
DESIGNED KRISTI PARK
DRAWN KRISTI PARK
APPROVED JOSHUA P. BEARD
KEVIN VANDERZANDEN, PLS
PROJECT MANAGER

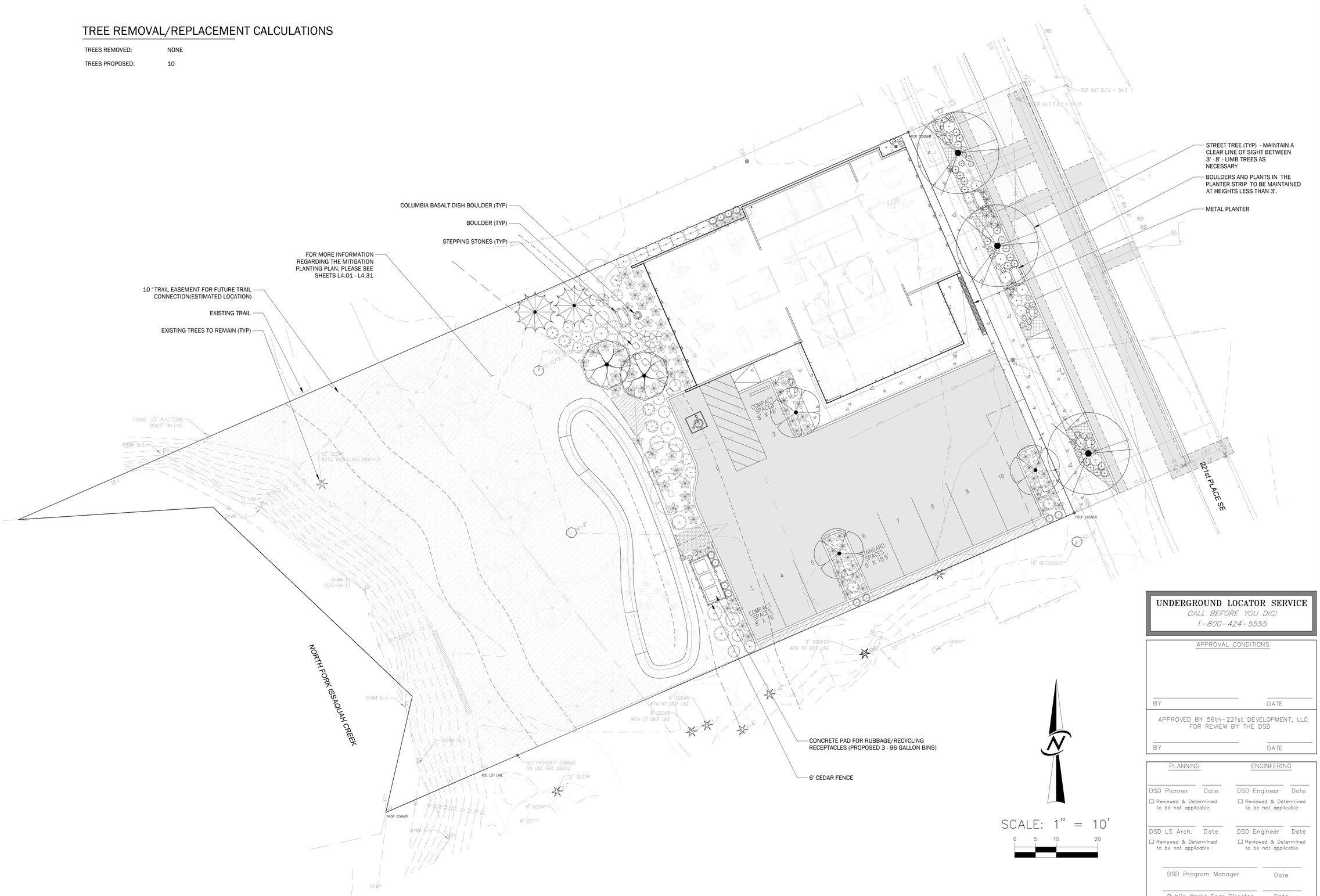
SHEET L1.01 OF 10

PROJECT NUMBER 14047D

TREE REMOVAL/REPLACEMENT CALCULATIONS

TREES REMOVED: NONE

TREES PROPOSED: 10



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CERTIFICATE NO. 938

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EXHIBIT FOR RECOLOGY
5655 221ST STREET - ISSAQUAH
DUDLEY SMILES
4127 93RD PLACE SE
MERCER ISLAND, WA 98040

DATE MAY 2016
DESIGNED KRISTI PARK
DRAWN KRISTI PARK
APPROVED JOSHUA P. BEARD
KEVIN VANDERZANDEN, PLS
PROJECT MANAGER

SHEET L2.01 OF 10

PROJECT NUMBER 14047D

PLANT SCHEDULE

TREES	QTY	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	COMMENTS	NATIVE/NW ADAPTIVE
	2	ACER JAPONICUM `SANGO KAKU`	CORALBARK AMUR MAPLE	1.5" CAL. MIN.	AS SHOWN	FULL/WELL BRANCED	NW ADAPTIVE
	3	HALESIA CAROLINA JFS-PN2LEGACY`` VARIETY JFS-PN2LEGACY``	CRUSHED VELVET SILVERBELL	1.5" CAL. MIN.	AS SHOWN	FULL/WELL BRANCED	NW ADAPTIVE
	2	THUJA PLICATA	WESTERN RED CEDAR	4`-6` HT. MIN.	10` O.C. (AS SHOWN)	WELL-BRANCHED	NATIVE
	3	ULMUS X `FRONTIER`	AMERICAN ELM	2.5" CAL. MIN	AS SHOWN		

SHRUBS	QTY	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	COMMENTS	NATIVE/NW ADAPTIVE
	3	ACER CIRCINATUM	VINE MAPLE	1.5" CAL. MIN.	AS SHOWN	FULL/WELL BRANCED	NATIVE
	3	BLECHNUM SPICANT	DEER FERN	1 GAL	AS SHOWN	FULL & BUSHY	NATIVE
	4	CHAMAECYPARIS OBTUSA `FILICOIDES`	HINOKI FALSE CYPRESS	2 GAL	AS SHOWN	FULL & BUSHY	NORTHWEST ADAPTIVE
	1	CISTUS X HYBRIDUS	WHITE ROCKROSE	2 GAL	AS SHOWN		
	12	CORNUS ALBA `ELEGANTISSIMA`	SILVEREDGE DOGWOOD	2 GAL	AS SHOWN	FULL & BUSHY	NORTHWEST ADAPTIVE
	19	CORNUS STOLONIFERA `KELSEYI`	KELSEY DOGWOOD	2 GAL	AS SHOWN	3 CANES MIN.	NATIVE
	1	ILEX CRENATA `HELERII`	HELER JAPANESE HOLLY	2 GAL	AS SHOWN	FULL & BUSHY	NORTHWEST ADAPTIVE
	12	JUNIPERUS SCOPULORUM `SKYROCKET`	SKYROCKET JUNIPER	3 GAL./24" HT. MIN.	AS SHOWN	FULL & BUSHY	NORTHWEST ADAPTIVE
	34	LAVANDULA ANGUSTIFOLIA `HIDCOTE BLUE`	HIDCOTE BLUE LAVENDER	2 GAL	AS SHOWN	FULL & BUSHY	NORTHWEST ADAPTIVE
	7	MAHONIA AQUIFOLIUM	OREGON GRAPE	2 GAL	AS SHOWN	FULL & BUSHY	NATIVE
	10	NASSELLA TENUISSIMA	TEXAS NEEDLE GRASS	2 GAL	AS SHOWN	FULL & BUSHY	NORTHWEST ADAPTIVE
	17	PENNISETUM ALOPECUROIDES `HAMELN`	HAMELN DWARF FOUNTAIN GRASS	2 GAL	AS SHOWN	FULL & BUSHY	NORTHWEST ADAPTIVE
	82	POLYSTICHUM MUNITUM	WESTERN SWORD FERN	2 GAL	AS SHOWN	FULL & BUSHY	NATIVE
	9	RHODODENDRON X `RAMAPO`	RAMAPO RHODODENDRON	2 GAL	AS SHOWN	FULL & BUSHY	NORTHWEST ADAPTIVE
	8	RIBES SANGUINEUM	RED FLOWERING CURRANT	2 GAL	AS SHOWN	FULL & BUSHY	NATIVE
	4	VACCINIUM OVATUM	EVERGREEN HUCKLEBERRY	2 GAL	AS SHOWN	FULL & BUSHY	NATIVE
	13	VIBURNUM DAVIDII	DAVID VIBURNUM	2 GAL	AS SHOWN	FULL & BUSHY	NORTHWEST ADAPTIVE

GROUND COVERS	QTY	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	COMMENTS
	65 SF	ARCTOSTAPHYLOS UVA-URSI	KINNIKINNICK	1 GAL.	18" O.C.	NATIVE
	188 SF	MAHONIA NERVOSA	OREGON GRAPE	1 GAL.	18" O.C.	NATIVE

BOULDER SCHEDULE

SYMBOL	SIZE	QTY.
	1/2-1 MAN ROCK	2
	2-3 MAN ROCK	6
	FLAT ROCK	3

NOTES

1. REUSE EXISTING BOULDERS ON SITE WHEN POSSIBLE. IF EXISTING BOULDERS NOT ADEQUATE, BOULDERS SHALL BE A LOCALLY AVAILABLE GRANITE, WEATHERED, AND SEMI-ROUND IN SHAPE.
2. BOULDERS ADJACENT TO WALKWAYS TO HAVE ROUNDED EDGES.

STREET TREE & PLANTER STRIP NOTES

1. ROOT BARRIERS REQUIRED FOR STREET TREES AND TREES WITHIN 5' OF HARD SURFACES.
2. MAINTAIN STREET TREES BY MAINTAINING A CLEAR LINE OF SIGHT IN BETWEEN 3' - 8'
3. MAINTAIN SHRUBS IN THE PLANTER STRIP TO A MAXIMUM HEIGHT OF 3'.

GENERAL LANDSCAPE NOTES

9. LANDSCAPING

9.1. LANDSCAPING REVIEW IN RIGHT-OF-WAY (ROW) IS LIMITED TO UTILITY CONFLICTS AND TRESS IN ACCORDANCE WITH THE MASTER STREET TREE PLAN, COMPLIANCE WITH CONDITIONS IN THE LAND USE PERMIT, ROADS, SITE DISTANCE VISIBILITY, AND CONSISTENCY WITH CENTRAL ISSAQUAH PLAN STANDARDS. THE SAME APPLIES TO MINI PARKS, UNLESS PLAY EQUIPMENT IS INVOLVED WHICH WOULD BE REVIEWED FOR SAFETY.

9.2. INCLUDE ABOVEGROUND UTILITIES (I.E. LIGHT POLES, HYDRANTS, STREET SIGNAGE, ETC.) ON ALL PLAN SUBMITTALS. PLACE THE FOLLOWING NOTES ON ALL LANDSCAPE PLANS SUBMITTED FOR CITY OF ISSAQUAH:

9.2.1. CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE LOCATIONS OF ALL UNDERGROUND UTILITIES PRIOR TO COMMENCEMENT OF WORK; AND TO PROTECT SAID UTILITIES FROM DAMAGE DURING PLANT INSTALLATION.

9.2.2. CONTACTOR SHALL OBTAIN AND PAY FOR ALL NECESSARY PERMITS AND FEES AS REQUIRED BY APPLICABLE CODES AND ORDINANCES FOR THIS WORK.

9.2.3. CONTRACTOR SHALL PROVIDE PROTECTION OF ALL PROPERTY, PERSONS, WORK IN PROGRESS, STRUCTURES, UTILITIES, WALKS, CURBS AND PAVED SURFACES DURING THE INSTALLATION OF LANDSCAPE AND IRRIGATION WORK.

9.2.4. CONTRACTOR SHALL KEEP ALL AREAS OF WORK CLEAN, NEAT AND ORDERLY AT ALL TIMES. ALL PAVED AREAS ARE TO BE CLEANED FOLLOWING PLANTING AND MAINTENANCE ACTIVITIES.

9.2.5. CONFLICTS BETWEEN APPROVED PLANTING PLANS, LANDSCAPE PERFORMANCE STANDARDS AND EXISTING FIELD CONDITIONS SHALL BE IDENTIFIED TO THE DIRECTOR OR DESIGNEE PRIOR TO PLANTING.

9.2.6. PROPOSALS FOR PLANT SUBSTITUTIONS, LOCATION ADJUSTMENTS, SOIL AMENDMENTS OR ANY VARIATIONS FROM THE APPROVED PLANS SHALL REQUIRE PRIOR APPROVAL BY THE DIRECTOR OR DESIGNEE.

9.2.7. SOILS LOCATED IN PLANTING AREAS THAT HAVE BEEN COMPACTED TO A DENSITY GREATER THAN THAT PENETRABLE WITH A HAND SHOVEL (APPROX. 85%), SHALL BE LOOSENED TO INCREASE AERATION FOR A MINIMUM DEPTH OF 18 INCHES FOR THE ENTIRE AREA OF THE COMPACTED SOILS UTILIZED FOR LANDSCAPE PURPOSES. IMPORTED TOPSOIL SHALL BE INCORPORATED INTO LOOSENED SUB GRADE TO A MINIMUM DEPTH OF 6".

9.2.8. VERIFICATION OF THE NEED FOR ADDITIONAL SOIL AMENDMENTS WILL BE MADE AT THAT TIME. RECOMMENDED AMENDMENTS SHALL BE APPLIED PRIOR TO PLANTING (SEE CITY OF ISSAQUAH CODE REQUIREMENTS REGARDING SOIL AMENDMENTS HERON).

9.2.9. USE OF FERTILIZER, ORGANIC OR SYNTHETIC SLOW-RELEASE TYPE, AND PESTICIDES OF ANY KIND SHALL ONLY BE PERMITTED BY THE DIRECTOR OR DESIGNEE. PERMITTED APPLICATIONS OF PESTICIDES SHALL BE APPLIED BY LICENSED APPLICATORS ONLY. ALL USE OF FERTILIZERS, PESTICIDES, AND HERBICIDES SHALL COMPLY WITH BEST MANAGEMENT PRACTICES FOR ISSAQUAH HIGHLANDS. APPLICATIONS OF ALL PESTICIDES, HERBICIDES, AND FERTILIZERS SHALL BE MADE IN A MANNER THAT WILL INHIBIT THEIR ENTRY INTO WATERWAYS, WETLANDS, AND STORM DRAINS.

9.2.10. ALL PLANT MATERIAL SHALL MEET CURRENT AMERICAN ASSOCIATION OF NURSERYMAN STANDARDS FOR NURSERY STOCK (ANSI 260.1) REQUIREMENTS. PLANT SIZES FOR BUFFERS AND PARKING LOTS SHALL CONFORM TO STANDARDS OUTLINED IN ISSAQUAH MUNICIPAL CODE SECTION 18.12.140.

9.2.11. ALLOW 24 HOURS MINIMUM NOTIFICATION FOR INSPECTION REQUEST. PLANT MATERIAL THAT HAS BEEN APPROVED FOR INSTALLATION SHALL BE PLANTED WITHIN 24 HOURS. INSTALLATION SHALL NOT BE CONDUCTED UNDER ADVERSE WEATHER CONDITIONS WITHOUT PRIOR APPROVAL OF THE DIRECTOR OR DESIGNEE. PLANT MATERIAL THAT CANNOT BE PLANTED WITHIN ONE DAY FOLLOWING ARRIVAL SHALL BE HEELED-IN, KEPT MOIST AND PROTECTED AT ALL TIMES FROM EXTREME WEATHER CONDITIONS. PLANTS SHALL BE STORED AT THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

9.2.12. TREE PITS SHALL BE A MINIMUM OF THREE TIMES (3X) THE DIAMETER OF THE TREE'S ROOT MASS. ADDITIONAL AERATION MAY BE REQUIRED AS DIRECTED BY THE DIRECTOR OR DESIGNEE. ADD WATER TUBES TO THE TREE PLANTINGS IN PAVED AREAS.

9.2.13. STREET TREES SHALL BE SYMMETRICAL AND UNIFORM IN APPEARANCE, SIZE AND STRUCTURE.

9.2.14. STREET TREE AND SHRUB SETBACKS SHALL BE CONSISTENT WITH ADOPTED CITY OF ISSAQUAH STREET STANDARDS, AND MEET THE FOLLOWING GENERAL REQUIREMENTS UNLESS OTHERWISE DIRECTED BY THE DIRECTOR OR DESIGNEE:

9.2.15. TREES WILL NOT BE PLANTED IN LOCATIONS THAT COULD LEAD TO ROOTS DAMAGING SIDEWALKS OR CURBING.

9.2.16. TREES WILL NOT BE PLANTED TO OBSTRUCT VEHICULAR LINES-OF-SIGHT AT TRAFFIC INTERSECTIONS AND DRIVEWAYS OR TO OBSTRUCT STREET LIGHTING, SIGNAGE OR TO RESULT IN A SAFETY CONCERN.

9.2.17. TURF AREAS SHALL CONSIST OF A LOW WATER USE SEED MIX THAT IS WELL ADAPTED TO THE REGION. SPECIFIC SEED SELECTION SHALL BE CHOSEN BASED ON SOILS, MAINTENANCE EXPECTATIONS AND PROPOSED USE OF THE PLANTING AREA.

9.2.18. PLANT MATERIALS SHALL BE GUARANTEED FOR A PERIOD OF THREE YEARS TO REMAIN IN A HEALTHY AND ATTRACTIVE MANNER. TO INSURE THIS OCCURS THE APPLICANT SHALL PROVIDE A CASH DEPOSIT OF 50% OF THE VALUE OF THE PLANT MATERIAL AND IRRIGATION PRIOR TO CONSTRUCTION PERMIT SIGN-OFF. PLANT MATERIAL THAT HAS LOST MORE THAN 30 PERCENT OF ITS NORMAL FOLIAGE SHALL BE REPLACED AS DIRECTED BY THE DIRECTOR OR DESIGNEE.

9.2.19. ALL PLANTING AREAS TO RECEIVE 2" DEPTH APPROVED MULCH.

9.2.20 LANDSCAPE PERFORMANCE BOND SHALL NOT BE RELEASED WITHOUT CITY OF ISSAQUAH ACCEPTANCE.

9.2.21 THE CITY SHALL APPROVE PLANT LAYOUT ALONG 56TH AND 221ST STREET FRONTAGE PRIOR TO PLANT INSTALLATION. CALL FOR INSPECTION AT LEAST 48 HOURS IN ADVANCE OF PLANTING: DAVID FAVOUR DSD (425) 837-3090

9.2.22 PRIOR TO INSTALLATION OF ANY PLANT MATERIAL, DOCUMENTATION SHALL BE PROVIDED TO THE CITY THAT THE ASSOCIATED IRRIGATION PLAN HAS BEEN REVIEWED BY THE CITY OF ISSAQUAH (OR EQUIVALENT AS DETERMINED BY THE DIRECTOR OR DESIGNEE) AND ARE CONSISTENT WITH THE WATER BUDGET INDICATED IN THE PLAN SET; AND, ARE CONSISTENT WITH THE CITY OF ISSAQUAH WATER CONSERVATION STANDARDS.

9.2.23 CONTACT THE FOLLOWING CITY OF ISSAQUAH PERSONNEL FOR ASSISTANCE OR INFORMATION: MIKE MARTIN= - (425) 837-3100

STANDARD PLANTING BED PREPARATION NOTES

1. SUBGRADE SHALL BE A MINIMUM OF EIGHT (8) INCHES BELOW FINISH GRADE. SUBSTANDARD SOILS SHALL BE REMOVED PRIOR TO ADDING AMENDMENTS.
2. INCORPORATE WATER AND NUTRIENT HOLDING MATERIALS INTO SOIL AS DEEP AS POSSIBLE (A MIN. OF 12"). USE FULLY COMPOSTED ORGANIC MATERIAL.
3. SOILS WITHIN PLANTERS SHALL BE A GROWING MEDIUM THAT IS A COMBINATION OF ORGANIC AND INORGANIC MATTER SUCH AS AMERICAN HYDROTECH'S LITETOP GROWING MEDIUM.

CITY OF ISSAQUAH SOIL AMENDMENT REQUIREMENTS

SOIL AMENDMENTS – COMPOST, TOPSOIL AND SEED MIX SPECIFICATIONS: ALL NEW LANDSCAPE AREAS SHALL BE REQUIRED TO AMEND SOILS TO IMPROVE SOIL HEALTH AND NUTRIENT AVAILABILITY, INCREASE POROSITY, INFILTRATION AND MOISTURE HOLDING CAPACITY AND SHALL MEET MINIMUM SPECIFICATIONS FOR SOILS, COMPOST, MULCHES AND SEED MIXES.

1. SUBGRADE SHALL BE A MINIMUM OF EIGHT (8) INCHES BELOW FINISH GRADE. SUBSTANDARD SOILS SHALL BE REMOVED PRIOR TO ADDING AMENDMENTS.
2. A SOILS ANALYSIS SHALL BE COMPLETED FOR ALL NEW PLANTING AREAS AND SHALL INCLUDE:
   A. A DETERMINATION OF SOIL TEXTURE, INDICATING PERCENTAGE OF ORGANIC MATTER.
   B. AN APPROXIMATED SOIL INFILTRATION RATE EITHER MEASURED OR DERIVED FROM SOIL/TEXTURE/INFILTRATION RATE TABLES.
   C. A MEASURE OF PH VALUE.
3. SOILS FOR USE IN PROJECTS APPLYING LOW IMPACT DEVELOPMENT (LID) STANDARDS SHALL FOLLOW THE LID TECHNICAL GUIDANCE MANUAL FOR PUGET SOUND, SECTION 6.2, AMENDING CONSTRUCTION SITE SOILS.
4. FOR SOILS THAT WILL NOT ADEQUATELY PERCOLATE TO PROVIDE PROPER DRAINAGE FOR PLANT MATERIALS, A PLAN TO CORRECT THE SITUATION SHALL BE DEVELOPED BY THE LANDSCAPE ARCHITECT AND APPROVED BY THE PLANNING DIRECTOR/MANAGER.
5. GUIDELINES FOR MEETING MINIMUM STANDARDS ARE AVAILABLE AT THE PERMIT CENTER AND SHALL FOLLOW THE WASHINGTON STATE UNIVERSITY KING COUNTY EXTENSION SERVICES GUIDELINES FOR SOIL CONDITIONS AND PLANT SELECTION.

UNDERGROUND LOCATOR SERVICE
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APPROVAL CONDITIONS

BY DATE

APPROVED BY 56th-221st DEVELOPMENT, LLC FOR REVIEW BY THE DSD

BY DATE

PLANNING	ENGINEERING
DSD Planner Date	DSD Engineer Date
☐ Reviewed & Determined to be not applicable	☐ Reviewed & Determined to be not applicable
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DSD Program Manager Date

Public Works Engr Director Date

ONLY SHEETS WITH AUTHORIZING SIGNATURES HAVE BEEN APPROVED FOR CONSTRUCTION

NO.	REVISIONS	DATE

STATE OF WASHINGTON REGISTERED LANDSCAPE ARCHITECT
JOSHUA PENNINGTON BEARD
CERTIFICATE NO. 938

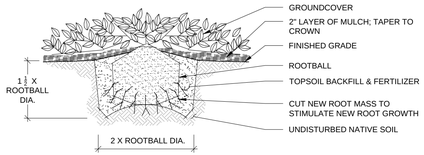
CORE DESIGN
14711 NE 29th Place, Suite 101
Bellevue, Washington 98007
425.883.7877 Fax 425.883.7963
ENGINEERING • PLANNING • SURVEYING

LANDSCAPE SCHEDULE AND NOTES
5655 221ST STREET - ISSAQUAH
DUDLEY SMILES
4127 93RD PLACE SE
MERCER ISLAND, WA 98040

DATE MAY 2016
DESIGNED KRISTI PARK
DRAWN KRISTI PARK
APPROVED JOSHUA P. BEARD
KEVIN VANDERZANDEN, PLS
PROJECT MANAGER

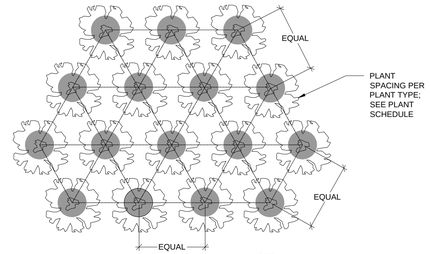
SHEET L2.02 OF 10

PROJECT NUMBER 14047D



DETAIL: PLANTING GROUNDCOVER

SCALE: NOT TO SCALE

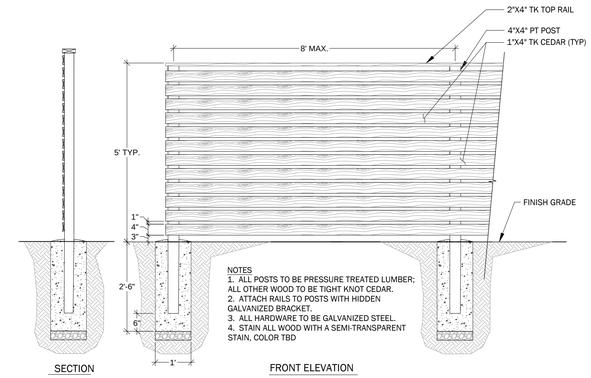


NOTE:
TO AVOID LANDSCAPE INTRUSION INTO PATHS, THE FOLLOWING PLANTING SPACING OFF-SETS FROM EDGE OF ALL PATHS, DRIVES, ACCESS ROUTES, ETC. SHALL BE MET:

GROUND COVER: 18"
SMALL SHRUBS (UNDER 3' TALL): 30"
MEDIUM SHRUBS (FROM 3' TALL TO 6'): 42"
LARGE SHRUBS (OVER 6' TALL): 48"

DETAIL: PLANTING GROUNDCOVER SPACING

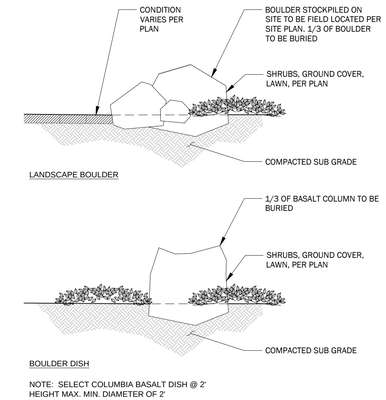
SCALE: NOT TO SCALE



NOTES
1. ALL POSTS TO BE PRESSURE TREATED LUMBER; ALL OTHER WOOD TO BE TIGHT KNOT CEDAR.
2. ATTACH RAILS TO POSTS WITH HIDDEN GALVANIZED BRACKET.
3. ALL HARDWARE TO BE GALVANIZED STEEL.
4. STAIN ALL WOOD WITH A SEMI-TRANSPARENT STAIN, COLOR TBD

DETAIL - CEDAR FENCE

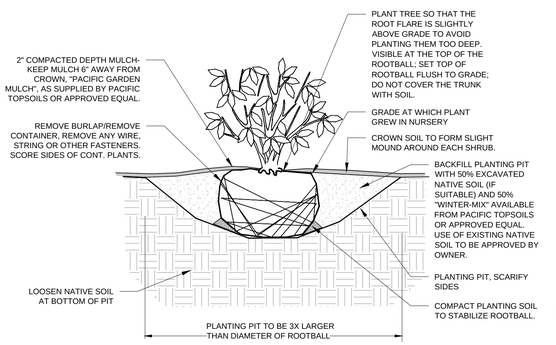
SCALE: NOT TO SCALE



NOTE: SELECT COLUMBIA BASALT DISH @ 2' HEIGHT MAX. MIN. DIAMETER OF 2'

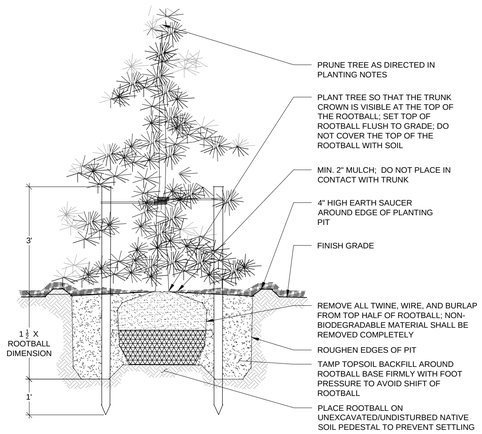
DETAIL - LANDSCAPE BOULDERS

SCALE: NOT TO SCALE



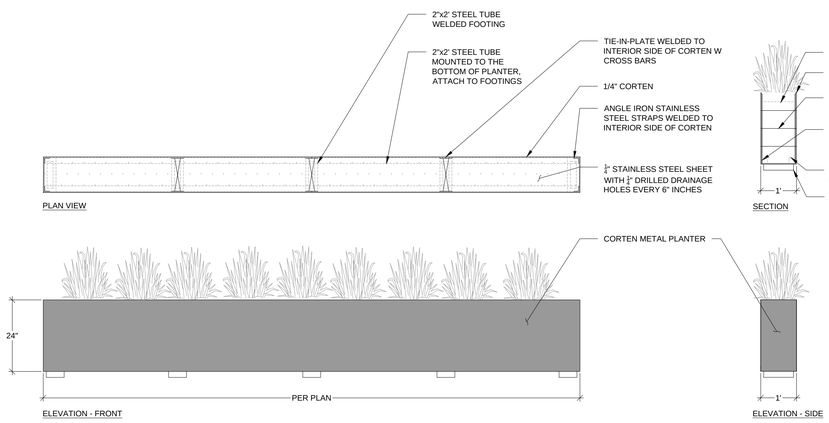
DETAIL: TYPICAL SHRUB PLANTING

SOURCE: CITY OF ISSAQUAH SCALE: NOT TO SCALE



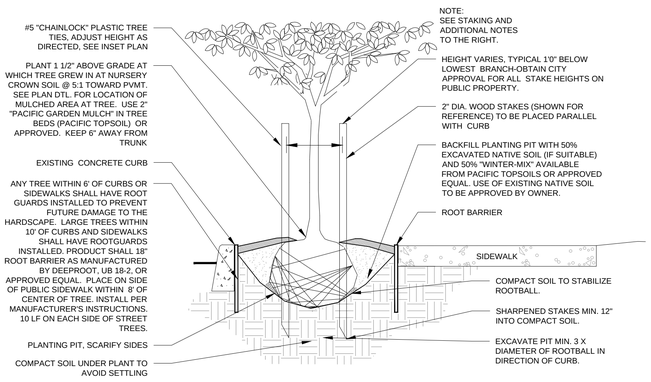
DETAIL: PLANTING CONIFER TREE

SCALE: NOT TO SCALE



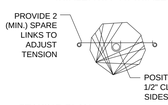
DETAIL - RAISED METAL PLANTER

SCALE: NOT TO SCALE



DETAIL: TREE PLANTING IN PLANTER STRIP

SOURCE: CITY OF ISSAQUAH SCALE: NOT TO SCALE

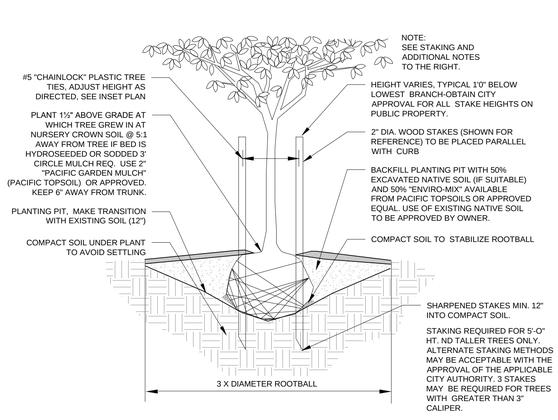


STAKING PLAN

STAKING REQUIRED FOR 5'-0" HT. AND TALLER TREES ONLY. ALTERNATE STAKING METHODS MAY BE ACCEPTABLE WITH THE APPROVAL OF THE APPLICABLE CITY AUTHORITY. 3 STAKES MAY BE REQUIRED FOR TREES WITH GREATER THAN 3" CALIPER.

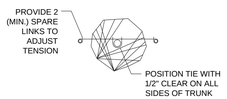
ADDITIONAL NOTES (APPLY TO ALL TREE PLANTING DETAILS):

1. CONDUCT TREE PIT DRAINAGE TEST PRIOR TO PLANTING. IF WATER IN HOLE DROPS 1/2" PER HOUR, DRAINAGE IS ACCEPTABLE. OWNER'S REP MUST BE PRESENT.
2. SPECIAL GRADING AND/OR PIT DRAINAGE WILL BE REQUIRED PER DTL. IF PERCOLATION IS A PROBLEM.
3. MAINTAIN THE TREE IN GOOD HEALTH AFTER DELIVERY. HEAL IN W/ DAMP SAWDUST IF NOT IMMEDIATELY PLANTED.
4. REMOVE ANY BURLAP WIRE, STRING OR OTHER FASTENER FROM ENTIRE ROOTBALL PRIOR TO PLACEMENT.
5. PRUNE PER ANSI 300A PART 1 STANDARDS
6. PROVIDE AN ADDITIONAL 30%%% INCREASE TO EACH CHAINLOCK TREE TIE TO ALLOW FOR FUTURE LOOSENING
7. PLANT TREE SO THAT THE ROOT FLARE IS SLIGHTLY ABOVE GRADE TO AVOID PLANTING THEM TOO DEEP



DETAIL: TYPICAL TREE PLANTING/STAKING

SOURCE: CITY OF ISSAQUAH SCALE: NOT TO SCALE



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DSD Program Manager Date	
Public Works Engr Director Date	

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DATE	BY	REVISIONS

STATE OF WASHINGTON REGISTERED LANDSCAPE ARCHITECT
JOSHUA PENNINGTON BEARD
CERTIFICATE NO. 938

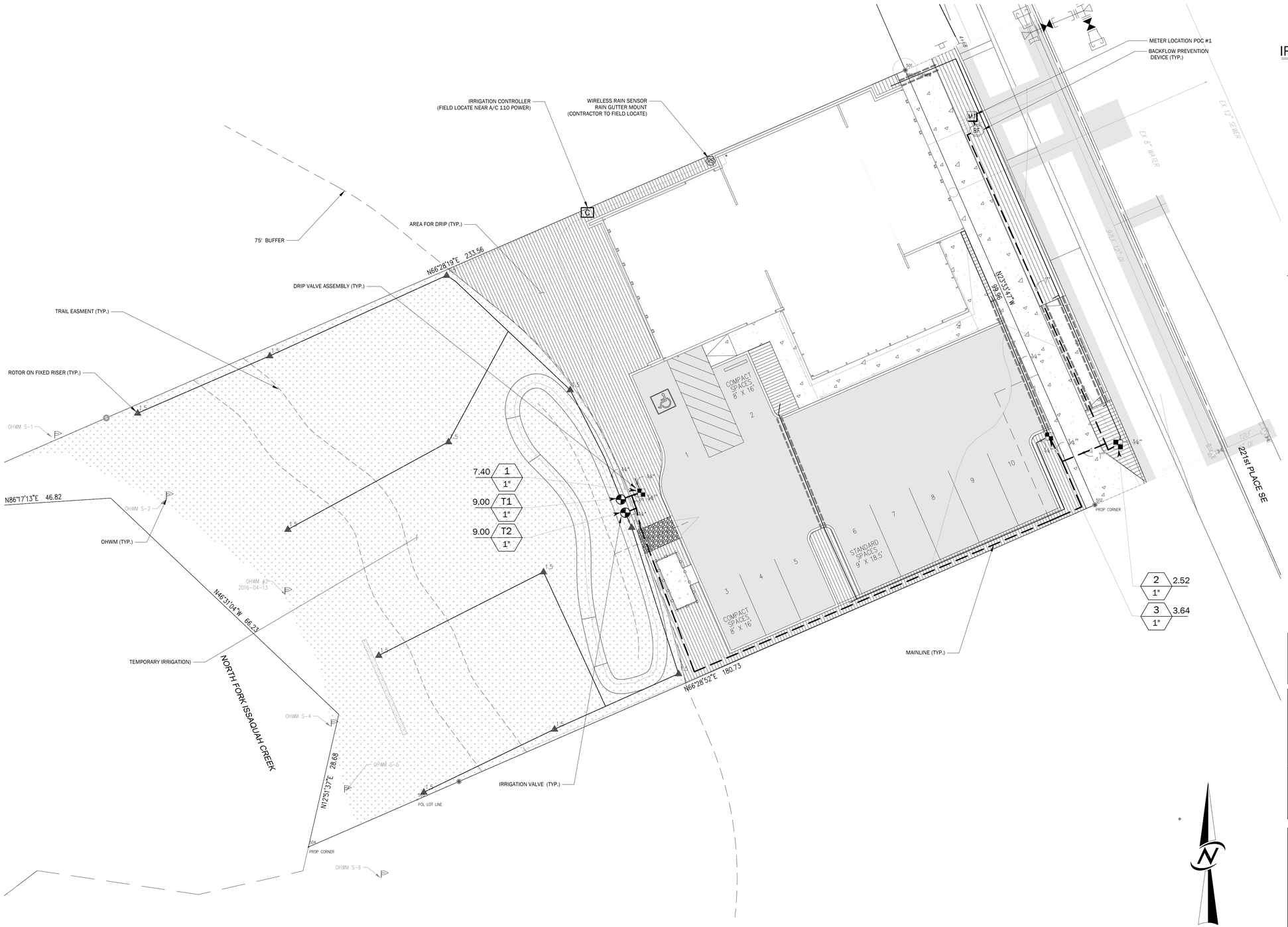
CORE DESIGN
14711 NE 29th Place, Suite 101
Bellevue, Washington 98007
425.883.7877 Fax 425.883.7963
ENGINEERING • PLANNING • SURVEYING

LANDSCAPE DETAILS
5655 221ST STREET - ISSAQUAH
DUDLEY SMILES
4127 93RD PLACE SE
MERCER ISLAND, WA 98040

DATE	MAY 2016
DESIGNED	KRISTI PARK
DRAWN	KRISTI PARK
APPROVED	JOSHUA P. BEARD
	KEVIN VANDERZANDEN, PLS PROJECT MANAGER

SHEET L2.31 OF 10

PROJECT NUMBER 14047D



IRRIGATION LEGEND

SYMBOL	DESCRIPTION
1.5	ROTOR ON FIXED RISER
	DRIP VALVE ASSEMBLY
	REMOTE CONTROL VALVE
	AREA TO RECEIVE DRIPLINE
BF	BACKFLOW PREVENTION DEVICE
C	IRRIGATION CONTROLLER
RS	RAIN SENSOR
M1	IRRIGATION METER
	LATERAL PIPE
	MAINLINE PIPE
	PIPE SLEEVE

NOTES

1. IRRIGATION DESIGN IS SCHEMATIC:
   - ALL IRRIGATION WORK TO BE PERFORMED WITHIN PLANTING BEDS EXCEPT FOR SLEEVING.
   -SLEEVING RUNS SHOWN IN APPROXIMATE LOCATIONS,CONTRACTOR TO PLACE SLEEVES AS NEEDED BASED ON SITE CONDITIONS AT TIME OF INSTALLATION.
   -MAINLINE DISPLAYED FOR GRAPHICAL CLARITY. ACTUAL LOCATION TO BE DECIDED IN THE FIELD.
   -MAINLINE AND LATERALS MAY SHARE TRENCHING WHERE POSSIBLE . (SEE DETAIL ON L3.31)

MITIGATION AREAS TO RECEIVE TEMPORARY IRRIGATION (SEE NOTES L3.02)

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APPROVAL CONDITIONS

BY DATE

APPROVED BY 56th-221st DEVELOPMENT, LLC FOR REVIEW BY THE DSD

BY DATE

PLANNING	ENGINEERING
DSD Planner Date	DSD Engineer Date
☐ Reviewed & Determined to be not applicable	☐ Reviewed & Determined to be not applicable
DSD LS Arch. Date	DSD Engineer Date
☐ Reviewed & Determined to be not applicable	☐ Reviewed & Determined to be not applicable
DSD Program Manager Date	
Public Works Engr Director Date	

ONLY SHEETS WITH AUTHORIZING SIGNATURES HAVE BEEN APPROVED FOR CONSTRUCTION

SCALE: 1" = 10'

0 5 10 20

LANDSCAPE IRRIGATION PLAN

SCALE = 1" = 10'

NO.	REVISIONS	DATE

STATE OF WASHINGTON REGISTERED LANDSCAPE ARCHITECT
JOSHUA PENNINGTON BEARD
CERTIFICATE NO. 938

CORE DESIGN
ENGINEERING • PLANNING • SURVEYING
14711 NE 29th Place Suite 101
Bellevue, Washington 98007
425.885.7877 Fax 425.885.7963

IRRIGATION PLAN
5655 221ST STREET - ISSAQUAH
DUDLEY SMILES
4127 83RD PLACE SE
MERCER ISLAND, WA 98040

DATE	MAY 2016
DESIGNED	KRISTI PARK
DRAWN	KRISTI PARK
APPROVED	JOSHUA P. BEARD
	KEVIN VANDERZANDEN, PLS PROJECT MANAGER

SHEET	OF
L3.01	10

PROJECT NUMBER
14047D

IRRIGATION SPECIFICATIONS

GENERAL REQUIREMENTS / JOB CONDITIONS

PART 1. GENERAL

1.1 SCOPE OF WORK

A. FURNISH AND INSTALL A COMPLETE PERMANENT UNDERGROUND IRRIGATION SYSTEM TO PROVIDE ADEQUATE IRRIGATION OF ALL AREAS SHOWN ON THE IRRIGATION PLAN.

1.2 WORK INCLUDED

A. FURNISH ALL LABOR, MATERIALS, TOOLS AND EQUIPMENT AS NECESSARY FOR PROPER EXECUTION AND COMPLETION OF ALL IRRIGATION WORK. RECORD DRAWINGS SHALL BE COMPILED BY IRRIGATION CONTRACTOR.

B. IRRIGATION SYSTEM LAYOUT IS DIAGRAMMATIC. EXACT LOCATIONS OF PIPING, DRIPLINE, SPRINKLER HEADS, VALVES, AND OTHER COMPONENTS SHALL BE ESTABLISHED BY CONTRACTOR IN THE FIELD AT TIME OF INSTALLATION. MINOR ADJUSTMENTS IN SYSTEM LAYOUT WILL BE PERMITTED TO CLEAR EXISTING FIXED OBSTRUCTIONS

C. ANY IRRIGATION RE-DESIGN WORK OR SHOP DRAWINGS SHALL BE REVIEWED AND APPROVED BY THE OWNER'S REPRESENTATIVE PRIOR TO CONSTRUCTION. DRAWINGS MUST BE NEATLY DRAFTED (ON MYLAR OR IN AN ELECTRONIC FORMAT (AUTOCAD 2000 OR LATER)) AND INCLUDE ALL NECESSARY INFORMATION FOR A COMPLETE DESIGN REVIEW.

1.3 RELATED WORK

A. ROUGH GRADING: SITE TO BE CLEARED, GRUBBED AND SUB-GRADES SET BY GENERAL CONTRACTOR PRIOR TO INSTALLATION OF IRRIGATION SYSTEM.

B. GENERAL CONTRACTOR TO SUPPLY AND INSTALL WATER SERVICE CONNECTION AND WATER METER, WITH THREADED STUB-OUT AT DISCHARGE SIDE OF WATER METER TO CORRESPOND TO IRRIGATION SYSTEM MAINLINE PIPE SIZE.

C. GENERAL CONTRACTOR TO SUPPLY 110 VOLT POWER TO CONTROLLER; AND TO PROVIDE ANY SLEEVING REQUIRED TO PENETRATE STRUCTURES OR WALLS.

D. GENERAL CONTRACTOR TO SUPPLY ALL SLEEVES FOR IRRIGATION SYSTEMS AT TWO (2) TIMES DIAMETER OF LINE SIZE MINIMUM.

E. ANY CHANGES AND/ OR ADJUSTMENTS TO LOCATIONS OF SLEEVES, ONCE INSTALLED, SHALL BE DONE AT THE EXPENSE OF THE GENERAL CONTRACTOR.

1.4 RESPONSIBILITY

A. THE IRRIGATION CONTRACTOR WILL BE REQUIRED PER STATE LAW TO CALL THE UNDERGROUND UTILITIES LOCATOR SERVICE AT (1-800-424-5555) BEFORE WORK COMMENCES. THE IRRIGATION CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ANY DAMAGE TO AND PROTECTION OF EXISTING UTILITIES AND STRUCTURES. THE IRRIGATION CONTRACTOR WILL ALSO COMPLY WITH THE FOLLOWING CODES AND STANDARDS:
1. THE LOCAL JURISDICTIONAL ORDINANCES AND BUILDING CODES;
2. NATIONAL ELECTRICAL CODE;
3. AMERICAN SOCIETY FOR TESTING AND MATERIALS, (ASTM);
4. NATIONAL SANITATION FOUNDATION, (NSF);
5. EXCAVATING, BACKFILLING, AND COMPACTING OPERATIONS;
6. PROTECT EXISTING TREES, PLANTS, LAWNS, AND OTHER FEATURES DESIGNATED TO REMAIN AS PART OF THE FINAL LANDSCAPE WORK.
7. OBTAIN OWNER'S REPRESENTATIVE'S ACCEPTANCE OF INSTALLED AND TESTED IRRIGATION SYSTEM PRIOR TO INSTALLING BACKFILL MATERIALS. NOTIFICATION MUST PRECEDE REQUESTED INSPECTION BY 24 HOURS.

B. THE IRRIGATION CONTRACTOR IS RESPONSIBLE FOR ALL DAMAGES TO THE GROUNDS, WALKS, CURBS, ROADS, BUILDINGS, EXISTING VEGETATION, PIPING SYSTEMS, ELECTRICAL SYSTEMS AND THEIR EQUIPMENT AND CONTENTS CAUSED BY LEAKS IN THE IRRIGATION SYSTEM BEING INSTALLED OR HAVING BEEN INSTALLED BY HIM. THE IRRIGATION CONTRACTOR SHALL REPAIR ALL DAMAGES AT HIS EXPENSE AND IN A MANNER WHICH IS SATISFACTORY TO THE GENERAL CONTRACTOR AND THE OWNER.

1.5 QUALIFICATION OF INSTALLER

A. CONTRACTOR MUST BE A LICENSED AND/OR BONDED IRRIGATION CONTRACTOR. THE IRRIGATION SYSTEM MUST BE INSTALLED BY AN EXPERIENCED IRRIGATION INSTALLER.

1.6 VERIFICATION

A. BEFORE PROCEEDING WITH ANY WORK, THE IRRIGATION CONTRACTOR SHALL INSPECT THE SITE, CAREFULLY CHECK ALL GRADES AND VERIFY ALL DIMENSIONS AND CONDITIONS AFFECTING THE WORK TO SATISFY HIMSELF THAT HE MAY PROCEED SAFELY AND ACCEPT THE SITE AS READY FOR HIS WORK TO BEGIN.

1.7 PIPE SLEEVES

A. PROVIDED AND INSTALLED BY THE GENERAL CONTRACTOR WHERE IRRIGATION LINES CROSS WALKS, SIDEWALKS, DRIVEWAYS AND/OR PARKING LOTS. THE IRRIGATION CONTRACTOR SHALL COORDINATE LOCATION AND INSTALLATION OF PIPE SLEEVING WITH THE GENERAL CONTRACTOR.

1.8 SYSTEM FAMILIARIZATION

A. UPON ACCEPTANCE OF SYSTEM BY OWNER, THE IRRIGATION CONTRACTOR SHALL PROVIDE NECESSARY KEYS AND/OR OTHER TOOLS NECESSARY TO OPERATION; DRAIN; ACTIVATE SYSTEM AND SHALL SPEND SUFFICIENT TIME WITH OWNER TO INSURE THAT SYSTEM OPERATION; MAINTENANCE; AND WINTERING CAN CONTINUE ON AFTER THE DEPARTURE OF CONTRACTORS. THE IRRIGATION CONTRACTOR SHALL LABEL CIRCUITS CLEARLY ON CONTROLLER.

1.9 “AS BUILT” RECORD DRAWINGS

A. A NEAT AND LEGIBLE REPRODUCIBLE DRAWING (ON MYLAR OR IN AN ELECTRONIC FORMAT (AUTOCAD 2000 OR LATER)), SHOWING THE ACTUAL INSTALLED LOCATIONS OF ALL IRRIGATION EQUIPMENT SHALL BE PROVIDED WITHIN THEIR (30) DAYS OF FINAL ACCEPTANCE.

1.10 SUBMITTALS

A. PRODUCT DATA: MANUFACTURER'S TECHNICAL DATA AND INSTALLATION INSTRUCTIONS.

1.11 WARRANTY AND REPLACEMENT

A. MATERIALS AND WORKMANSHIP SHALL BE FULLY GUARANTEED FOR ONE (1) YEAR FOLLOWING OWNER'S FINAL ACCEPTANCE OF PROJECT AT 100% COMPLETION. THIS WARRANTY EXCLUDES WORK DONE ON SYSTEM BY OTHERS AFTER FINAL ACCEPTANCE. VANDALISM OR ANY DAMAGE DONE BY OTHERS OR DUE TO ACTS OF GOD ARE NOT COVERED. MANUFACTURER'S WARRANTY SHALL EXTEND BEYOND 1 YEAR IF APPLICABLE.

B. REPAIRS, ADJUSTMENTS AND REPLACEMENT OF DEFECTIVE IRRIGATION SYSTEM MATERIALS, INCLUDING MATERIALS THAT HAVE BEEN INSTALLED ON THE WORK DURING THE WARRANTY PERIOD SHALL BE AT CONTRACTOR'S EXPENSE.

PART 2. MATERIALS

2.1 MATERIAL

A. ALL MATERIALS TO BE INCORPORATED IN THIS SYSTEM SHALL BE NEW AND WITHOUT FLAWS OR DEFECTS AND OF QUALITY AND PERFORMANCE AS SPECIFIED, AND MEETING THE REQUIREMENTS OF THE SYSTEM.
1. NO SUBSTITUTIONS OF SMALLER PIPE SIZES WILL BE PERMITTED BUT SUBSTITUTIONS OF LARGER SIZES OF SAME TYPE AT NO EXTRA COST WITH APPROVAL ARE ACCEPTABLE.
2. NO SUBSTITUTIONS WILL BE PERMITTED WHICH HAVE NOT BEEN SUBMITTED FOR PRIOR WRITTEN APPROVAL.

2.2 GALVANIZED PIPE

A. SHALL BE SCHEDULE 40, DOMESTIC MANUFACTURE, AND SHALL CONFORM TO ASTM DESIGNATION A 120-65. FITTINGS SHALL BE MALLEABLE GALVANIZED.

2.3 PLASTIC PIPE

A. SHALL BE PVC 1120 OR 1220, SCHEDULE 40 PVC TO 1 ¼”, THEN CLASS 200 PVC..

B. PIPE SHALL BE MARKED WITH MANUFACTURER'S NAME, CLASS OF PIPE, NSF SEAL AND DATE AND SHIFT OF MANUFACTURING RUN. PIPE SHALL BEAR NO EVIDENCE OF INTERIOR OR EXTERIOR EXTRUSION MARKS.

C. PIPE WALLS SHALL BE UNIFORM, SMOOTH AND GLOSSY. PIPE MAY BE PRE-BELLED OR WITH INDIVIDUAL SOLVENT-WELD COUPLINGS.

D. FITTINGS SHALL BE SCHEDULE 40 WEIGHT, FULL SIZE. FITTINGS, CEMENT, AND THINNER SHALL BE A BRAND(S) RECOMMENDED BY MANUFACTURER OF PIPE.

E. PVC SOLVENT WELD PIPE: PVC 1120 AND 1220 MATERIAL, 200 PSI MINIMUM PRESSURE RATING WITH SDR 21 WALLS WHICH CONFORM TO ASTM D 2241.

2.4 DRIPLINE SYSTEM

A. DRIPLINE AND INTEGRAL DRIPLINE COMPONENTS:
THE DRIPLINE SHALL BE PRESSURE COMPENSATING DRIPLINE. DRIPPER FLOW RATE AND SPACING SHALL BE AS INDICATED ON SCHEDULE.
1. DRIPLINE FITTINGS: ALL DRIPLINE CONNECTIONS SHALL BE MADE WITH APPROVED INSERT FITTINGS; MANUFACTURER EQUAL TO THAT OF DRIPLINE.
2. SOIL STAPLES: ALL ON-SURFACE/UNDER MULCH DRIPLINE INSTALLATIONS SHALL BE HELD IN PLACE WITH SOIL STAPLES SPACED EVENLY EVERY 5' ON CENTER, AND WAT EACH FITTING
3. LINE FLUSHING VALVES: ALL DRIPLINE SYSTEMS SHALL BE INSTALLED WITH MANUAL OR AUTOMATIC LINE FLUSHING VALVES, AS SPECIFIED ON DRAWINGS.
4. AIR/VACUUM RELIEF VALVES: DRIPLINE SYSTEMS SHALL BE INSTALLED WITH AIR/VACUUM RELIF VALVES ONLY WHERE INDICATED ON DRAWINGS.
5. DISC FILTER: A DISC FILTER SHALL BE INSTALLED AT EACH ZONE VALVE OR ON THE MAIN LINE TO ENSURE PROPER FILTRATION . THE FILTER SHALL BE A TORO DISC FILTER (ALFD75150-L) OR APPROVED SUBSTITUTE.

2.5 HEAD SYSTEM

A. MANUFACTURER'S STANDARD UNIT DESIGNED TO PROVIDE UNIFORM COVERAGE OVER ENTIRE AREA OF SPRAY INDICATED AT AVAILABLE WATER PRESSURE, AS FOLLOWS:
1. POP-UP SPRAY: FIXED PATTERN, WITH SCREW-TYPE FLOW ADJUSTMENT AND STAINLESS STEEL RETRACTION SPRING. SEE SCHEDULE ON PLAN FOR SPECIFIC MODEL TYPE.
2 POP-UP ROTARY SPRAY: GEAR DRIVEN, FULL CIRCLE AND ADJUSTABLE PART CIRCLE TYPE. SEE SCHEDULE ON PLAN FOR SPECIFIC MODEL TYPE.

2.6 REMOTE CONTROL VALVES

A. MANUFACTURER'S STANDARD OF TYPE AND SIZE INDICATED. SEE SCHEDULE ON PLAN.

2.7 AUTOMATIC CONTROLLER

A. GENERAL: FURNISH LOW VOLTAGE SYSTEM MANUFACTURED EXPRESSLY FOR CONTROL OF AUTOMATIC CIRCUIT VALVES OF UNDERGROUND IRRIGATION SYSTEMS. PROVIDE UNIT OF CAPACITY TO SUIT NUMBER OF CIRCUITS. SEE SCHEDULE ON PLAN.

B. CONTROL ENCLOSURE - EXTERNAL APPLICATIONS: MANUFACTURER'S STANDARD WEATHERPROOF ENCLOSURE WITH LOCKING COVER ON PEDESTAL. SEE SCHEDULE ON PLAN.

C. CONTROLLER WIRING ABOVE GROUND SHALL BE INSTALLED IN A CONDUIT.

2.8 CONTROL WIRE

A. #14-1 UF DIRECT BURIAL WIRE. WHITE SHALL BE COMMON, RED THE VALVE IMPULSE, WITH A THIRD COLOR AS A SPARE WIRE TO RUN FROM CONTROLLER TO THE END VALVE ON EACH LEG OF THE MAINLINE. IDENTIFY EACH SPARE AT THE CONTROLLER. IDENTIFY WIRE COLOR ON THE AS-BUILTS.

B. WIRE MUST BE INSULATED SINGLE STRAND COPPER DESIGNED FOR TWO (2) TO FIFTY (50) VOLTS AND UL APPROVED AS TYPE U.F.

C. MULTI-STRAND CABLE MAY BE USED WITH PRIOR APPROVAL OF OWNER'S REPRESENTATIVE.

2.9 BACKFLOW PREVENTION DEVICES

A. DOUBLE CHECK VALVE ASSEMBLY SHALL BE INSTALLED ON THE DISCHARGE SIDE OF THE WATER METER. DOUBLE CHECK VALVES SHALL BE OF HEAVY DUTY CONSTRUCTION WITH ALL BRONZE BODIES, CHECK VALVES AND TEST COCKS. DOUBLE CHECK VALVES SHALL BE DESIGNED TO OPERATE UNDER CONTINUOUS PRESSURE PERMITTING THE FREE FLOW OF WATER AT ALL TIMES. SEE DETAILS.

B. DOUBLE CHECK VALVES SHALL BE FURNISHED WITH APPROVED CHECK VALVES, INLET AND DISCHARGE SHUT-OFF VALVES AND FIELD TESTING COCKS. UNLESS OTHERWISE SPECIFIED, DOUBLE CHECK VALVES SHALL HAVE A SERVICE RATING OF 300 PSI FOR NON-SHOCK COLD WATER.

D. DOUBLE CHECK VALVE ASSEMBLY TO BE FEBCO 805 Y OR EQUAL AS APPROVED BY THE STATE DEPT. OF HEALTH..

2.10 PRESSURE REGULATING VALVE

A. SHALL BE “WILKINS 600 SERIES” PRESSURE REGULATION VALVES OR EQUAL.

B. USE PRESSURE REGULATING VALVES AS REQUIRED TO CONTROL IRRIGATION SYSTEM WATER PRESSURE.

2.12 QUICK COUPLING VALVES

A. QUICK COUPLING VALVES SHALL BE TORO QUICK COUPLING VALVE, OR APPROVED SUBSTITUTE. PROVIDE LUG KEYS WITH HOSE SWIVEL ELLS AS QUICK COUPLING VALVES.

2.13 VALVE BOXES

A. ALL VALVES TO BE ENCLOSED IN A VALVE BOX. REMOTE CONTROL VALVES TO BE INSTALLED IN AN ARMOR ACCESS BOX 12” STANDARD BOX, OR EQUAL.

2.14 METER

A. PER LOCAL CODE, ALL METERS WILL BE PERMITTED IN PLACE, BY OWNER.

PART 3 EXECUTION

3.1 VPRE-CONSTRUCTION

A. PRIOR TO STARTING WORK, CONTRACTOR SHALL ATTEND A PRE-CONSTRUCTION CONFERENCE WITH OWNER'S PROJECT MANAGER/SUPERINTENDENT, OWNER'S REPRESENTATIVE AND/OR LANDSCAPE ARCHITECT TO DISCUSS PROJECT REQUIREMENTS, CHANGED SITE CONDITIONS, PHASING AND OTHER ISSUES.

3.2 VERIFICATION

A. BEFORE PROCEEDING WITH ANY WORK, THE IRRIGATION CONTRACTOR SHALL INSPECT THE SITE, CAREFULLY CHECK ALL GRADES AND VERIFY ALL DIMENSIONS AND CONDITIONS AFFECTING THE WORK TO SATISFY HIMSELF THAT HE MAY PROCEED SAFELY AND ACCEPT THE SITE AS READY FOR HIS WORK TO BEGIN.

B. REPORT ANY DEVIATIONS BETWEEN THE CONTRACTOR-PREPARED IRRIGATION DRAWINGS AND THE SITE. FAILURE TO DO SO PRIOR TO THE INSTALLING OF EQUIPMENT, AND RESULTING IN REPLACING, AND/OR RELOCATING, OR ADDITIONAL EQUIPMENT, SHALL BE DONE AT CONTRACTOR'S EXPENSE.

C. AVAILABLE PRESSURE VERIFICATION: PRIOR TO THE START OF ANY WORK, VERIFY THE STATIC PRESSURE AT POINT OF CONNECTION. NOTIFY OWNER IN WRITING OF PRESSURE AVAILABLE FOR APPROVAL TO PROCEED.

D. CONFLICT WITH UTILITIES AND PLANT MATERIALS: LOCATE IRRIGATION LINES TO AVOID EXISTING AND PROPOSED UTILITY LINES, AND PROPOSED PLANT MATERIAL LOCATIONS AND ANY EXISTING TREES. MINOR FIELD ADJUSTMENTS TO SHRUBS MAY BE MADE WITH APPROVAL, TO AVOID EQUIPMENT.

3.3 PREPARATION

LAY OUT AND STAKE THE LOCATION OF EACH PIPE RUN AND ALL SPRINKLER HEADS AND SPRINKLER VALVES.

3.4 INSTALLATION

A. TRENCHING: TRENCHES SHALL BE STRAIGHT AND WITHOUT ABRUPT GRADE CHANGES. TRENCH BOTTOMS SHALL BE FLAT AND CLEAN OF ANY LARGE OR SHARP ROCK. THE TRENCH DEPTH SHALL BE DEEP ENOUGH TO ALLOW 18 INCHES OF COVER OVER MAIN LINE AND 12 INCHES OF COVER OVER LATERALS OR AS PER APPLICABLE MUNICIPAL CODES AND 4" - 8" INCHES COVER OVER DRIPLINE. PIPE SLEEVES SHALL BE AT A MINIMUM DEPTH OF 18 INCHES AND A MAXIMUM DEPTH OF 24 INCHES. MAINTAIN A MINIMUM CLEARANCE OF THREE (3) INCHES BETWEEN IRRIGATION LINES IF IN A COMMON TRENCH.

B. DRIPLINE:
1. INSTALL ALL DRIPLINE AS INDICATED ON DRAWINGS. USE ONLY TEFLON TAPE ON ALL THREADED CONNECTIONS.
2. SUPPLY AND EXHAUST HEADERS SHOULD BE INDENTED 2"-4" FROM EDGE OF PLANTER BED, SIDEWALK OR STRUCTURE.
3. ALL DRIPLINE HEADERS TO BE $\frac{3}{4}$" DIA. UNLESS OTHERWISE CALLED OUT ON PLANS.
4. SPACE DRIPLINE AT INTERVALS AS INDICATED ON SCHEDULE.
5. CLAMP DRIPLINE FITTINGS WITH OETIKER CLAMPS, OR APPROVED SUBSTITUTE, WHEN OPERATING PRESSURE EXCEEDS SPECIFIC DRIPLINE FITTING REQUIREMENTS.
6. WHEN INSTALLING DRIPLINE, INSTALL SOIL STAPLES AS LISTED BELOW:
   a. ONE STAPLE EVERY THREE (5') FEET AND AT EACH FITTING (TEE, ELBOW, OR CROSS).
7. CAP OR PLUG ALL OPENINGS AS SOON AS LINES HAVE BEEN INSTALLED TO PREVENT THE ENTRANCE OF MATERIALS THAT WOULD OBSTRUCT THE PIPE. LEAVE IN PLACE UNTIL REMOVAL IS NECESSARY FOR COMPLETION OF INSTALLATION.
8. THOROUGHLY FLUSH ALL WATER LINES BEFORE INSTALLING VALVES AND OTHER COMPONENTS.
9. TEST IN ACCORDANCE WITH STANDARD PRACTICES.
10. FLUSH VALVES TO BE INSTALLED AT LOWEST ELEVATION OF DRIPLINE IRRIGATION AREA PER MANUFACTURER'S SPECIFICATIONS..

C. SPRINKLER HEADS:
1. INSTALL PER DETAIL AND MANUFACTURER'S RECOMMENDATION.
2. AFTER COMPLETION OF GRADING, SEEDING OR SODDING, AND ROLLING OF GRASS AREAS, ADJUST HEADS TO BE FLUSH WITH FINISHED GRADES.

D. DOUBLE CHECK VALVE ASSEMBLY:
1. BACKFLOW PREVENTION DEVICES SHALL HAVE SUFFICIENT CLEARANCE FROM OTHER MATERIALS FOR PROPER MAINTENANCE. MINOR ADJUSTMENTS OF LOCATION MAY BE REQUIRED FOR TECHNICAL PURPOSES OR TO SATISFY LOCAL GOVERNING AGENCIES AT NO ADDITIONAL COST TO THE CONTRACT
2. INSTALL ACCORDING TO MANUFACTURER'S SPECIFICATIONS, AND TO LOCAL MUNICIPAL CODE
3. INSTALL PER DETAIL.

E. REMOTE CONTROL VALVES:
1. BEFORE INSTALLATION, SUPPLY LINE SHALL BE THOROUGHLY FLUSHED.
2. ENCLOSE VALVE IN VALVE BOX.
3. INSTALL PER DETAIL

F. QUICK COUPLING VALVES:
1. ENCLOSE IN VALVE BOX.
2. PROVIDE ONE CUBIC FOOT OF 3/4” MINUS WASHED GRAVEL SUMP UNDER EACH VALVE.
3. INSTALL PER DETAIL OF PLAN SET AND AT LOCATIONS INDICATED ON PLAN.

G. CONTROL WIRE:
1. CONTROL WIRE SHALL BE TAPED TOGETHER AT 10-FOOT INTERVALS.
2. WIRING SHALL OCCUPY THE SAME TRENCH AND SHALL BE INSTALLED ALONG THE SAME ROUTE AS PRESSURE SUPPLY OR LATERAL LINKS WHENEVER POSSIBLE.
3. PROVIDE A 24 INCH LOOP OF CONTROL WIRE IN EACH VALVE BOX.
4. ALL SPLICES MUST BE MADE WATERTIGHT DRI-SPLICE DS-400, OR APPROVED SUBSTITUTE, AND CONTAINED IN VALVE BOXES.
5. SPLICES WILL BE PERMITTED ONLY AT THE VALVES AND NEVER BETWEEN VALVES OR VALVE AND CONTROLLER. THERE MUST BE A SEPARATE LEAD OR “HOT” WIRE TO EACH AUTOMATIC VALVE. ONE (1) COMMON WIRE WILL BE ACCEPTABLE. ONE (1) SPARE WIRE MUST BE RUN TO THE FARTHEST VALVE FROM THE CONTROLLER AS AN EXTRA WIRE.

H. AUTOMATIC CONTROLLERS:
1. ELECTRICAL WIRING SHALL BE INSTALLED ACCORDING TO LOCAL CODE. THE COST OF ALL ELECTRICAL WORK NECESSARY TO MAKE THE AUTOMATIC EQUIPMENT OPERATE PROPERLY SHALL BE INCLUDED IN THIS CONTRACT.
2. LOCATION AND TYPE OF CONTROLLER SHALL BE PER PLANS.
3. MOUNT THE PANEL ENCLOSURE SO ADJUSTMENTS CAN BE CONVENIENTLY MADE BY THE OPERATOR.
4. PROVIDE A CONTROLLER CHART SHOWING THE AREA CONTROLLER BY THE AUTOMATIC CONTROLLER. CHART SIZE SHALL BE MAXIMUM SIZE TO FIT IN THE CONTROLLER DOOR. CHART SHALL BE A REDUCTION OF THE “AS-BUILT” DRAWINGS.
5. SUPPLY OWNER WITH TWO CONTROLLER KEYS.

I. PIPE FITTINGS:
1. THE CONTRACTOR SHALL EXERCISE CARE IN HANDLING, LOADING, UNLOADING AND STORING TO AVOID DAMAGE. DELIVER PLASTIC PIPING IN BUNDLES, PACKAGED TO PROVIDE ADEQUATE PROTECTION OF PIPE ENDS, EITHER THREADED OR PLAIN.THE PIPE SHALL BE TRANSPORTED IN A VEHICLE WITH A BED LONG ENOUGH TO ALLOW THE LENGTH OF PIPE TO LAY FLAT, SO AS NOT TO BE SUBJECT TO UNDUE BENDING OR CONCENTRATED EXTERNAL LOAD AT ANY POINT. FITTINGS SHALL BE STORED UNDER COVER.
2. PVC CEMENT SHALL BE IPS WELD-ON. SOLVENT WELDING JOINTS SHALL BE GIVEN AT LEAST 15 MINUTES SET-UP TIME BEFORE MOVING OR HANDLING. PIPE SHALL BE CENTER LOADED TO PREVENT SLIPPING. NO WATER SHALL BE PERMITTED IN PIPE UNTIL A PERIOD RECOMMENDED BY MANUFACTURER.
3. BACK FILLING SHALL BE DONE WHEN PIPE IS NOT IN AN EXPANDED CONDITIONS DUE TO HEAT OR PRESSURE.
4. BEFORE PRESSURE TESTING, SOLUBLE WELD JOINTS SHALL BE GIVEN CURING TIME AS RECOMMENDED BY MANUFACTURER.
5. NO PVC PIPE MAY BE THREADED OR CONNECTED TO A THREADED FITTING WITHOUT AN ADAPTER.
6. GREAT CARE MUST BE TAKEN TO INSURE THAT THE INSIDE OF THE PIPE IS ABSOLUTELY CLEAN. ANY PIPE ENDS NOT BEING WORKED ON SHOULD BE PROTECTED AND NOT LEFT OPEN.

J. PIPE SLEEVES:
1. WHEREVER IRRIGATION LINES OR WIRE CROSS BENEATH PAVED SURFACES, PIPING AND WIRE SHALL BE INSTALLED IN SLEEVES. SIZE TO BE TWO TIMES PIPE DIAMETER, MINIMUM TWO INCH SLEEVE SHALL BE PROVIDED FOR WIRE.

K. MANUAL DRAINS:
1. INSTALL PER MANUFACTURER'S RECOMMENDATIONS AS SHOWN ON IRRIGATION PLAN.
2. INSTALL BY TEEING DOWN TO 3/4-INCH DRAIN VALVE. PROVIDE A DRAINAGE SUMP SIZED TO RECEIVE VOLUME OF DRAIN WATER.
3. MAKE MANUAL DRAIN VALVES ACCESSIBLE BY INSTALLING AN ADJUSTABLE PIPE SLEEVE TO MEET FINISHED GRADE WITH LOCKING VALVE MARKER LID FLUSH WITH FINISH GRADE.

L. PRESSURE REGULATOR:
1. SET MAX. OPERATING PRESSURE AT 35 PSI.

3.5 SYSTEM FLUSHING

A. ENTIRE SYSTEM SHALL BE FLUSHED PRIOR TO INSTALLATION OF DRIPLINE AND SPRINKLER HEADS.

3.6 PERFORMANCE TESTS/SUBSTANTIAL COMPLETION

A. UPON COMPLETION OF SYSTEM INSTALLATION, CONTRACTOR SHALL OPERATE SYSTEM BY MEANS OF THE AUTOMATIC CONTROLLER IN PRESENCE OF OWNER'S REPRESENTATIVE.

B. AUTOMATIC SYSTEM SHALL BE CYCLED ELECTRICALLY AND AUTOMATICALLY TO THE SATISFACTION OF OWNER'S REPRESENTATIVE.

3.7 DISPOSAL OF WASTE MATERIAL

A. STOCKPILE, HAUL FROM SITE, AND LEGALLY DISPOSE OF WASTE MATERIALS, INCLUDING UNSUITABLE EXCAVATED MATERIALS, ROCK, TRASH, AND DEBRIS. DEBRIS MUST BE REMOVED AT THE END OF WORK TIME EACH DAY.

B. MAINTAIN PAVEMENT AND CURB CLEAR, CLEAN, AND FREE OF DEBRIS AND SOIL. PAVEMENT AND CURB SHALL REMAIN CLEAR, CLEAN AND FREE OF DEBRIS.

3.8 SURFACE RESTORATION

A. PROTECT EXISTING LANDSCAPING; REMOVE AND REPLANT AS NECESSARY TO COMPLETE INSTALLATION. REPLACE DAMAGED LAWN AREAS AND PLANTS WITH NEW PLANTS TO MATCH EXISTING.

3.9 CLEAN-UP

A. CLEAN ALL WORK AREAS ADJOINING AREA, SUCH AS PAVING, CURBS, CATCH BASINS, MANHOLES AND LAWN, OR DEBRIS CAUSED BY THE WORK ON THIS PROJECT, OR ANY PART OF PROJECT, ON COMPLETION OF OPERATIONS AND PRIOR TO WATERING. ALL HARD SURFACED AREAS SHALL BE WASHED CLEAN.

3.10 FINAL COMPLETION

A. UPON COMPLETION AND APPROVAL OF ALL TESTS.

B. PROVIDE OWNER WITH A LETTER FOR HIS SIGNATURE OUTLINING COMPLETION OF JOB AND OWNER'S FINAL ACCEPTANCE WITH START AND STOP DATES OF WARRANTY PERIOD.

3.11 WARRANTY

A. SHOULD ANY TROUBLE DEVELOP WITHIN ONE (1) YEAR WHICH, IS DUE TO INFERIOR OR FAULTY MATERIAL AND/OR WORKMANSHIP, THE TROUBLE SHALL BE CORRECTED, WITHOUT DELAY, TO THE SATISFACTION OF THE AUTHORIZED OWNER'S REPRESENTATIVE AND AT THE CONTRACTOR'S EXPENSE.

B. SYSTEM PROTECTION: AS PART OF WARRANTY UNDER THIS CONTRACT, CONTRACTOR SHALL BE RESPONSIBLE FOR DEACTIVATING AND DRAINING OF SYSTEM PRIOR TO ONSET OF FREEZING SEASON AS PER LOCAL SEASON REQUIRES, AND FOR REACTIVATING THE SYSTEM AT ONSET OF SPRING GROWING SEASON; EACH EVENT THE SYSTEM IS COMPLETED IN A SEASON WHEN SYSTEM WILL NOT BE IN USE, CONTRACTOR WILL WINTERIZE THE SYSTEM AS PER LOCAL SEASON REQUIRES, UPON COMPLETION OF TESTING AND APPROVAL BY OWNER AND REACTIVATE THE SYSTEM IN SPRING.

END OF SECTION

TEMPORARY IRRIGATION NOTES

TEMPORARY IRRIGATION NOTES

1. MITIGATION AREAS WITHIN THE 75' BUFFER TO BE IRRIGATED BY A TEMPORARY IRRIGATION,TO BE MAINTAINED FOR 2 YEARS TO ENSURE ESTABLISHMENT OF NATIVE PLANTINGS.

POTABLE WATER IRRIGATION BUDGET CALCS.

PLAN SET OR AREA	Permanant (S.F.)	Temporary (S.F.)	Total Landscape Area (S.F.)
PLANTING BEDS	2,757		
MITIGATION AREA		7,977	
			10,734

Irrigation Water Budget gallons/year	Estimated Water Use (EWU) in gallons/year
IWB	EWU
77,147	42,748
Difference	34,399
Difference between IWB and EWU (0 or Greater Than is Good)	

IRRIGATION SCHEDULE

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY	PSI	GPM	RADIUS
1.5	HUNTER I-20-00 SHRUB ROTOR, FIXED RISER. ADJUSTABLE AND FULL CIRCLE. PLASTIC RISER. DRAIN CHECK VALVE. STANDARD NOZZLE.	12	45	1.50	31'

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY	DETAIL
	HUNTER PCZ-101-25 DRIP CONTROL VALVE KIT. 1" PGV GLOBE VALVE WITH 1" HY100 FILTER SYSTEM. PRESSURE REGULATION: 25PSI. FLOW RANGE: 0.5 GPM TO 15 GPM. 150 MESH STAINLESS STEEL SCREEN.	3	
	AREA TO RECEIVE DRIPLINE HUNTER PLD-04-12 (14) IN-LINE PRESSURE COMPENSATING LANDSCAPE DRIPLINE WITH BUILT-IN CHECK VALVE. 0.4GPH EMITTERS AT 12.0" O.C. DRIPLINE LATERALS SPACED AT 14.0" APART, WITH EMITTERS OFFSET FOR TRIANGULAR PATTERN. UV RESISTANT.	2,289 S.F.	

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY	DETAIL
	HUNTER PGV-100-MB 1" PLASTIC ELECTRIC REMOTE CONTROL VALVE, FOR RESIDENTIAL/LIGHT COMMERCIAL USE. MALE THREAD X 1" BARB INLET/OUTLET. GLOBE CONFIGURATION, NO FLOW CONTROL.	2	
BF	ZURN 950XL 1" DOUBLE CHECK VALVE ASSEMBLY	1	
C	HUNTER XC-400 4 STATION CONTROLLER, RESIDENTIAL USE. PLASTIC CABINET, OUTDOOR, WITH 3 INDEPENDENT PROGRAMS. 120 VAC.	1	
RS	HUNTER WRF-CLIK RAIN/FREEZE SENSOR, INSTALL WITHIN 1000 FT OF CONTROLLER, IN LINE OF SIGHT. 22-28 VAC/VDC 100 MA POWER FROM TIMER TRANSFORMER. MOUNT AS NOTED. INCLUDES GUTTER MOUNT.	1	
M1	WATER METER 1"	1	
	IRRIGATION LATERAL LINE: PVC CLASS 200 SDR 21 PVC CLASS 200 IRRIGATION PIPE. ONLY LATERAL TRANSITION PIPE SIZES 1" AND ABOVE ARE INDICATED ON THE PLAN, WITH ALL OTHERS BEING 3/4" IN SIZE.	617.4 L.F.	
	IRRIGATION MAINLINE: CPVC SCHEDULE 40 CPVC SCHEDULE 40 IRRIGATION PIPE.	242.0 L.F.	
	PIPE SLEEVE: PVC CLASS 200 SDR 21	115.8 L.F.	

Valve Callout
Valve Number
Valve Flow
Valve Size

VALVE SCHEDULE

NUMBER	MODEL	SIZE	TYPE	WIRE	PSI	PSI @ POC	GPM	PRECIP
1	HUNTER PCZ-101-25	1"	AREA FOR DRIPLINE	62.3	51.05	60.81	7.40	0.58 in/h
2	HUNTER PCZ-101-25	1"	AREA FOR DRIPLINE	214.6	50.10	56.00	2.52	0.58 in/h
3	HUNTER PCZ-101-25	1"	AREA FOR DRIPLINE	206.9	50.47	56.64	3.64	0.58 in/h
T1	HUNTER PGV-100-MB	1"	SHRUB ROTOR	64.7	48.85	60.32	9.00	0.34 in/h
T2	HUNTER PGV-100-MB	1"	SHRUB ROTOR	67.7	48.47	59.89	9.00	0.30 in/h
	Common Wire			242.0				

CRITICAL ANALYSIS

P.O.C. NUMBER: 01
Water Source Information:

FLOW AVAILABLE	
Water Meter Size:	1"
Flow Available:	20.23 gpm
PRESSURE AVAILABLE	
Static Pressure at POC:	70.00 psi
Elevation Change:	5.00 ft
Service Line Size:	1"
Length of Service Line:	20.00 ft
Pressure Available:	66.00 psi
DESIGN ANALYSIS	
Maximum Station Flow:	9.00 gpm
Flow Available at POC:	20.23 gpm
Residual Flow Available:	11.23 gpm
Critical Station:	1
Design Pressure:	40.00 psi
Elevation Loss:	0.00 psi
Friction Loss:	0.08 psi
Fittings Loss:	0.01 psi
Loss through Valve:	10.96 psi
Pressure Req. at Critical Station:	51.05 psi
Loss for Fittings:	0.35 psi
Loss for Main Line:	3.47 psi
Loss for POC to Valve Elevation:	0.00 psi
Loss for Backflow:	5.50 psi
Loss for Water Meter:	0.44 psi
Critical Station Pressure at POC:	60.81 psi
Pressure Available:	66.00 psi
Residual Pressure Available:	5.19 psi

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APPROVAL CONDITIONS

BY DATE

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BY DATE

PLANNING | ENGINEERING

DSD Planner Date | DSD Engineer Date
☐ Reviewed & Determined to be not applicable | ☐ Reviewed & Determined to be not applicable

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Public Works Engr Director Date

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DATE | REVISIONS | NO.

STATE OF WASHINGTON REGISTERED LANDSCAPE ARCHITECT
JOSHUA PENNINGTON BEARD
CERTIFICATE NO. 938

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Bellevue, Washington 98007
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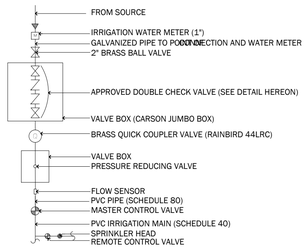
IRRIGATION SCHEDULE AND NOTES
5655 221ST STREET - ISSAQUAH

DUDLEY SMILES
4127 93RD PLACE SE
MERCER ISLAND, WA 98040

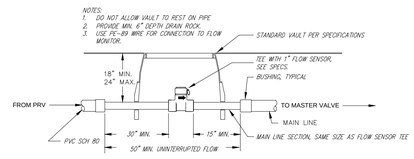
DATE MAY 2016
DESIGNED KRISTI PARK
DRAWN KRISTI PARK
APPROVED JOSHUA P. BEARD
KEVIN VANDERZANDEN, PLS
PROJECT MANAGER

SHEET L3.02 OF 10
PROJECT NUMBER 14047D



IRRIGATION LAYOUT

NOT TO SCALE



FLOW SENSOR

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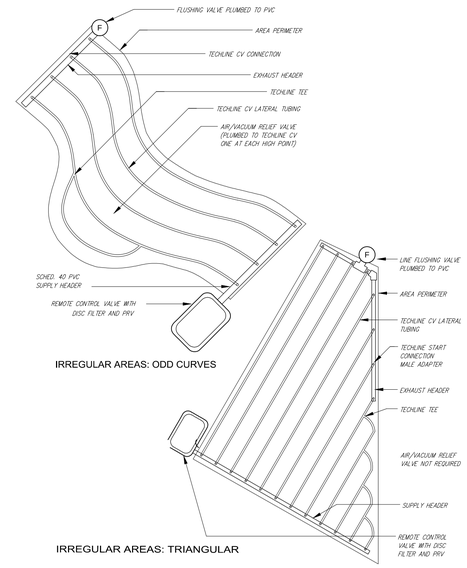

DRIP LAYOUT

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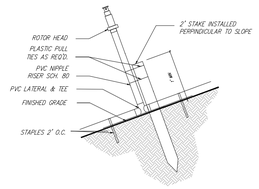

TEMPORARY IRRIGATION (ABOVE GRADE)

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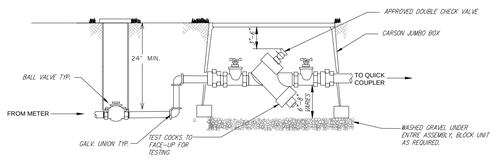

DOUBLE CHECK VALVE ASSEMBLY (POC)

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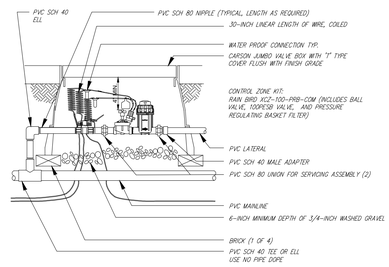

DRIP CONTROL VALVE

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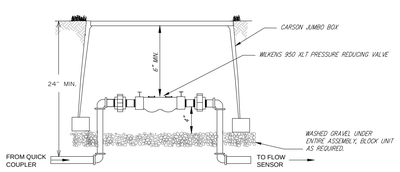

PRV VALVE

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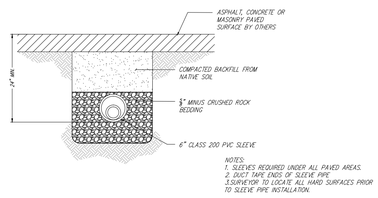

SLEEVE TRENCHING

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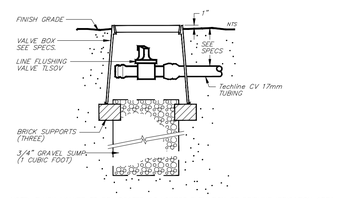

FLUSH VALVE

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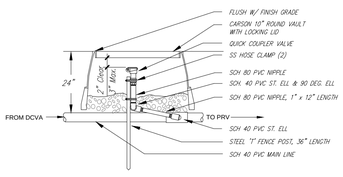

QUICK COUPLER VALVE

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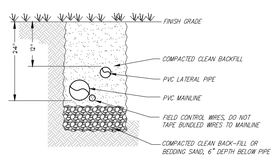

MAINLINE & LATERAL TRENCHING

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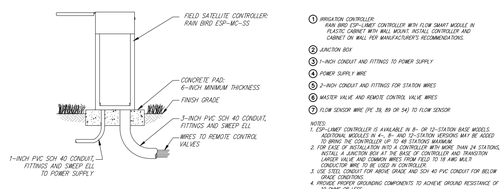

CONTROLLER

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BY DATE

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DSD LS Arch. Date	DSD Engineer Date
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DSD Program Manager Date

Public Works Engr Director Date

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NO.	REVISIONS	DATE

STATE OF WASHINGTON REGISTERED LANDSCAPE ARCHITECT
JOSHUA PENNINGTON BEARD
CERTIFICATE NO. 938

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IRRIGATION DETAILS
5655 221ST STREET - ISSAQUAH
DUDLEY SMILES
4127 93RD PLACE SE
MERCER ISLAND, WA 98040

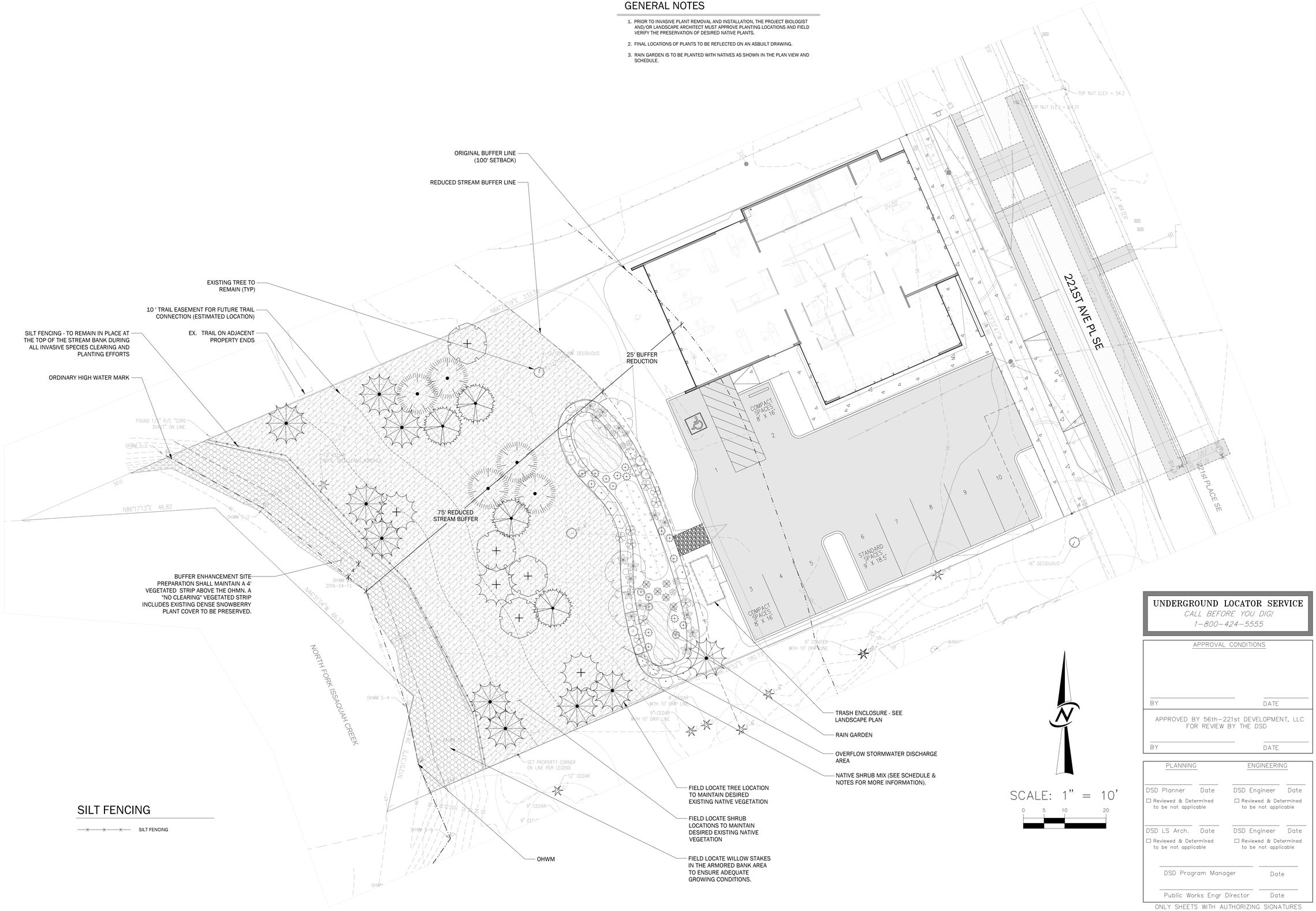
DATE	MAY 2016
DESIGNED	KRISTI PARK
DRAWN	KRISTI PARK
APPROVED	JOSHUA P. BEARD
PROJECT MANAGER	KEVIN VANDERZANDEN, PLS

SHEET	OF
L3.31	10

PROJECT NUMBER
14047D

GENERAL NOTES

1. PRIOR TO INVASIVE PLANT REMOVAL AND INSTALLATION, THE PROJECT BIOLOGIST AND/OR LANDSCAPE ARCHITECT MUST APPROVE PLANTING LOCATIONS AND FIELD VERIFY THE PRESERVATION OF DESIRED NATIVE PLANTS.
2. FINAL LOCATIONS OF PLANTS TO BE REFLECTED ON AN ASBUILT DRAWING.
3. RAIN GARDEN IS TO BE PLANTED WITH NATIVES AS SHOWN IN THE PLAN VIEW AND SCHEDULE.



SILT FENCING

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DSD Program Manager Date

Public Works Engr Director Date

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NO.	REVISIONS	DATE

PROJECT ECOLOGIST:
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SEATTLE, WA 98178
206-920-5489

CORE DESIGN
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STREAM MITIGATION PLANTING PLAN
5655 221ST STREET - ISSAQUAH
DUDLEY SMILES
4127 9.3RD PLACE SE
MERCER ISLAND, WA 98040

DATE MAY 2016
DESIGNED KRISTI PARK
DRAWN KRISTI PARK
APPROVED JOSHUA P. BEARD
KEVIN VANDERZANDEN, PLS
PROJECT MANAGER

SHEET L4.01 OF 10

PROJECT NUMBER 14047D

PLANT SCHEDULE - RAIN GARDEN

TREES	QTY	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	COMMENTS	NATIVE/NW ADAPTIVE
	2	THUJA PLICATA	WESTERN RED CEDAR	4`-6` HT. MIN.	10` O.C. (AS SHOWN)	WELL-BRANCHED	NATIVE
	1	ACER PALMATUM `SANGO KAKU`	CORAL BARK MAPLE	1.5" CAL.	AS SHOWN	FULL/WELL BRANCED	
	3	HALESIA CAROLINA JFS-PN2LEGACY VARIETY JFS-PN2LEGACY`	CRUSHED VELVET SILVERBELL	1.5" CAL. MIN.	AS SHOWN	FULL/WELL BRANCED	
	4	ACER CIRCINATUM	VINE MAPLE	1.5" CAL. MIN.	AS SHOWN	FULL/WELL BRANCED	NATIVE
	3	ULMUS X `FRONTIER`	AMERICAN ELM	2.5" CAL. MIN	AS SHOWN		

SHRUBS	QTY	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	COMMENTS	NATIVE/NW ADAPTIVE
	5	ATHYRIUM FILIX-FEMINA	COMMON LADY FERN	1 GAL	AS SHOWN	FULL & BUSHY	NATIVE
	7	BLECHNUM SPICANT	DEER FERN	1 GAL	AS SHOWN	FULL & BUSHY	NATIVE
	39	CORNUS SERICEA `KELSEYI`	KELSEY DOGWOOD	2 GAL	AS SHOWN	3 CANES MIN.	
	3	GAULTHERIA SHALLON	SALAL	2 GAL	AS SHOWN	FULL & BUSHY	
	10	MAHONIA AQUIFOLIUM	OREGON GRAPE	2 GAL	AS SHOWN	FULL & BUSHY	
	15	POLYSTICHUM MUNITUM	WESTERN SWORD FERN	2 GAL	AS SHOWN	FULL & BUSHY	NATIVE
	12	RIBES SANGUINEUM	RED FLOWERING CURRANT	2 GAL	AS SHOWN	FULL & BUSHY	
	9	SYMPHORICARPOS ALBUS	COMMON WHITE SNOWBERRY	2 GAL	AS SHOWN	FULL & BUSHY	
	5	VACCINIUM OVATUM	EVERGREEN HUCKLEBERRY	2 GAL	AS SHOWN	FULL & BUSHY	
	7	MAHONIA AQUIFOLIUM	OREGON GRAPE	2 GAL	AS SHOWN	FULL & BUSHY	NA

GROUND COVERS	QTY	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	COMMENTS	NATIVE/NW ADAPTIVE
	344	CAREX OBNUPTA	SLOUGH SEDGE	PLUG	12" O.C.	TRIANGULATE SPACING	NATIVE
	272	SCIRPUS MICROCARPUS	SMALL-FRUITED BULRUSH	PLUG	12" O.C.	TRIANGULATE SPACING	NATIVE

PLANT SCHEDULE - MITIGATION BUFFER

TREES	QTY	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	COMMENTS	NATIVE/NW ADAPTIVE
	5	ABIES GRANDIS	GRAND FIR	4`-6` HT. MIN.	10` O.C. (AS SHOWN)	WELL-BRANCHED	NATIVE
	4	ACER MACROPHYLLUM	BIG LEAF MAPLE	4`-6` HT. MIN.	10` O.C. (AS SHOWN)	WELL-BRANCHED	NATIVE
	3	PICEA SITCHENSIS	SITKA SPRUCE	4`-6` HT. MIN.	10` O.C. (AS SHOWN)	FULL/WELL BRANCED	NATIVE
	4	PSEUDOTSUGA MENZIESII	DOUGLAS FIR	4`-6` HT. MIN.	10` O.C. (AS SHOWN)	WELL-BRANCHED	NATIVE
	9	THUJA PLICATA	WESTERN RED CEDAR	4`-6` HT. MIN.	10` O.C. (AS SHOWN)	WELL-BRANCHED	NATIVE

SHRUBS	QTY	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	COMMENTS	NATIVE/NW ADAPTIVE
	82	POLYSTICHUM MUNITUM	WESTERN SWORD FERN	2 GAL	AS SHOWN	FULL & BUSHY	NATIVE
	9	RHODODENDRON X `RAMAPO`	RAMAPO RHODODENDRON	2 GAL	AS SHOWN	FULL & BUSHY	NON
	8	RIBES SANGUINEUM	RED FLOWERING CURRANT	2 GAL	AS SHOWN	FULL & BUSHY	NATIVE
	4	VACCINIUM OVATUM	EVERGREEN HUCKLEBERRY	2 GAL	AS SHOWN	FULL & BUSHY	NATIVE
	13	VIBURNUM DAVIDII	DAVID VIBURNUM	2 GAL	AS SHOWN	FULL & BUSHY	NON

GROUND COVERS	QTY	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	COMMENTS	NATIVE/NW ADAPTIVE
	65 SF	ARCTOSTAPHYLOS UVA-URSI	KINNIKINNICK	1 GAL.	18" O.C.	NATIVE	
	188 SF	MAHONIA NERVOSA	OREGON GRAPE	1 GAL.	18" O.C.	NATIVE	NATIVE

SHRUB AREAS	QTY	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	COMMENTS
	363	NATIVE SHRUBS 15% ACER CIRCINATUM, 20% CORNUS SERICEA, 10% PHYSOCARPUS CAPITATUS, 20% RUBUS SPECTABILIS, 20% ROSA NUTKANA, 15% SYMPHORICAPUS ALBUS	NATIVE SHRUBS	2 GAL./24" HT. MIN.	4` O.C.	PLANT SPECIES IN CLUSTERS

GROUND COVERS	QTY	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	COMMENTS	NATIVE/NW ADAPTIVE
	336	SALIX SITCHENSIS	SITKA WILLOW	LIVE STAKES	2` O.C.	4` IN LENGTH MIN.	NATIVE

RAIN GARDEN SOIL NOTES

SOIL SPECIFICATIONS
RAIN GARDE SOIL SHALL CONSIST OF A WELL-BLENDED MIXTURE BY VOLUME OF 2 PARTS COMPOST AND 3 PARTS MINERAL AGGREGATE MEETING THE REQUIREMENTS BELOW. ORGANIC MATTER IN THE MIX SHOULD BE AS CLOSE TO 8 TO 10 PERCENT AS POSSIBLE.

MINERAL AGGREGATE FOR TURF AND LANDSCAPE RAIN GARDEN SOIL
MINERAL AGGREGATE SHALL BE ANALYZED BY AN ACCREDITED LAB USING #200, #100,#60, #40, #20, #10, #4, 3/8 AND 1-INCH SIEVES; AND MEET THE FOLLOWING:

BIORETENTION MIX
SIEVE SIZE PERCENT PASSING
3/8" 100
NO. 4 95-100
NO.10 75-90
NO. 40 25-40
NO. 100 4-10
NO. 200 2-5

EFFORTS SHOULD BE MADE TO USE AGGREGATE WITH GRADATION MEETING COEFFICIENT OF UNIFORMITY EQUAL TO 6 OR ABOVE; AND COEFFICIENT OF CURVE OF 1 TO 3.

COMPOSTED MATERIAL
COMPOST SHALL BE THE RESULT OF THE BIOLOGICAL DEGRADATION OF TYPE I OR III FEEDSTOCKS, UNDER CONTROLLED CONDITIONS DESIGNED TO PROMOTE AEROBIC DECOMPOSITION, PER WAC 173-350-220, AND MEET THE FOLLOWING PHYSICAL CRITERIA.
1. COMPOST SHALL BE CERTIFIED IN COMPLIANCE WITH U.S. COMPOSTING COUNCIL SEAL OF TESTING ASSURANCE (STA) PROGRAM.
2. COMPOST SHALL MEET THE FOLLOWING PARTICLE SIZE GRADATION:
   SIEVE SIZE PERCENT PASSING
   1" 99-100
   5/8" 90-100
   ¼" 40-90
3. PH SHALL BE BETWEEN 5.5 AND 8.0.
4. MANUFACTURED INERT MATERIAL SHALL BE LESS THAN 1.0 PERCENT BY DRY WEIGHT.
5. ORGANIC MATTER CONTENT SHALL BE BETWEEN 45 AND 65 PERCENT BY DRY WEIGHT.
6. SOLUBLE SALT CONTENT LESS THAN 6.0 MMHOS/CM.
7. MATURITY SHALL BE OVER 80% PER TMECC 05.05-A, "GERMINATION AND VIGOR".
8. STABILITY SHALL BE 7 OR BELOW PER TMECC METHOD 05.08-B.
9. CONTAIN A MINIMUM OF 65 PERCENT BY VOLUME RECYCLED PLANT WASTE AS DEFINED IN WAC 173-350-100 AS "TYPE 1 FEEDSTOCKS." MAY CONTAIN A MAXIMUM OF 35 PERCENT BY VOLUME OF "TYPE III FEEDSTOCKS" INCLUDING POST-CONSUMER FOOD WASTE, AS DEFINED IN WAC 173-350-100, BUT NOT INCLUDING BIOSOLIDS.
10. FEEDSTOCKS SHALL ORIGINATE FROM LOCAL RECYCLING COLLECTION PROGRAMS.
11. CARBON TO NITROGEN RATIO SHALL BE LESS THAN 25:1. FOR PLANTINGS COMPOSED ENTIRELY OF PLANTS NATIVE TO THE PUGET SOUND LOWLANDS REGION, CARBON TO NITROGEN RATIO MAY BE 35:1.

MITIGATION NOTES

PROJECT MITIGATION

THE DUDLEY SMILES PROJECT CONSISTS OF A ONE-STORY OFFICE BUILDING, PARKING, LANDSCAPE AND A MITIGATION BUFFER PLANTING PLAN. THE WEST PROPERTY LINE OF THE PROJECT BORDERS THE NORTH FORK OF ISSAQUAH CREEK. THE NORTH FORK ISSAQUAH CREEK IS A CLASS 2S STREAM WITH SALMONID FISH.

THE STANDARD BUFFER FOR CLASS 2S STREAM IS 100 FEET. IN ORDER TO ALLOW ADEQUATE PARKING, SUFFICIENT BUILDING SQUARE FOOTAGE AND CIRCULATION, THE PROJECT DESIGN WILL REDUCE THE STREAM BUFFER BY 25% TO 75' FEET.

STORMWATER WILL BE DISCHARGED TOWARDS THE MITIGATION BUFFER BY COLLECTING IN A RAIN GARDEN AND INFILTRATING INTO THE SOIL.

THE EXISTING NORTH FORK ISSAQUAH CREEK BUFFER AREA DEMONSTRATES EVIDENCE OF PREVIOUS CLEARING AND GRADING ASSOCIATED WITH THE EXISTING RESIDENTIAL USE. THE STREAM BANK ALSO WAS ARMORED WITH RIP-RAP AT SOME POINT IN THE SITE'S HISTORY. THE STREAM BUFFER'S CURRENT CONDITION IS HEAVILY DOMINATED BY A DENSE SHRUB COVER OF HIMALAYAN BLACKBERRY.

THE STREAM BUFFER MITIGATION PLAN (SEE SHEETS L4.01 - L4.31) ARE PROVIDED TO ENHANCE THE BUFFER AREAS BETWEEN THE DEVELOPMENT AND THE NORTH FORK STREAM. THERE WILL BE MINIMAL LOSS (IF ANY) OF NATIVE TREES AND SHRUBS RELATED TO BUFFER REDUCTION AS THESE AREAS HAVE BEEN DISTURBED FROM CLEARING AND PAST USES. THE BUFFER HABITAT AND FUNCTION WILL BE IMPROVED BY PLANTING NATIVE TREES AND SHRUBS WITH THIS PLAN. IMPLEMENTATION OF THE PLAN WILL ADD DIVERSITY AND SPECIFICALLY PLANT CONIFER TREES THAT WOULD NOT LIKELY BECOME ESTABLISHED BY NATURAL SEED REGENERATION.

THIS DETAILED STREAM BUFFER MITIGATION PLAN INCLUDES THE TYPICAL COMPONENTS OF A FINAL MITIGATION PLAN INCLUDING MAINTENANCE AND MONITORING PROGRAMS. THE INTENT OF THE PLAN IS TO FACILITATE REASONABLE DEVELOPMENT FOR THE DUDLEY SMILES PROJECT AND ALSO IMPROVE STREAM BUFFER CONDITIONS. THIS PLAN IS TARGETING AN INCREASE IN STREAM BUFFER FUNCTIONS WITH ENHANCEMENT PLANTINGS AS APPROPRIATE MITIGATION MEASURES.

PER CITY OF ISSAQUAH CODE REQUIREMENTS, THE PLANTING DENSITY AND PERFORMANCE STANDARDS ARE TO BE CONSISTENT WITH THE CITY OF ISSAQUAH CODE REQUIREMENTS, THE PROPOSED STREAM BUFFER REDUCTION IS APPROPRIATE BECAUSE THE AREA HAS MORE THAN 40% COVER OF NON-NATIVE PLANTS AND THE MAJORITY OF THE TOPOGRAPHY IS FLAT (IMC 18.10.790 D.4.B. (1) & (2)). THE BUFFER ENHANCEMENT PLAN IDENTIFIES THE DEGRADED HABITAT AND BUFFER FUNCTIONS THAT CAN BE IMPROVED TO MEET THE CRITERIA OF IMC 18.10.790 D.4.C. (2). THE PLAN PROVIDES FOR BUFFER IMPROVEMENTS, REQUIRED PLANTING DENSITIES, AND MONITORING & MAINTENANCE (IMC 18.10.790 D.4.C. (3)).

MITIGATION GOALS

- MITIGATE IMPACTS ASSOCIATED WITH USE OF THE STREAM BUFFER BY PLANTING NATIVE TREES AND SHRUBS TO ADD SPECIES DIVERSITY AND STRUCTURE.
- REMOVE INVASIVE & NON-NATIVE SPECIES GROWING WITHIN STREAM BUFFER.
- PRESERVE & MAINTAIN AREAS OF DESIRED NATIVE PLANTINGS WITH SIGNIFICANT EMPHASIS NEAR THE STREAM SHORELINE.

PERFORMANCE STANDARDS

- ENHANCE APPROXIMATELY 7,000 SF OF STREAM BUFFER.
- ESTABLISH AT LEAST 5 NATIVE TREE SPECIES AND 7 NATIVE SHRUB SPECIES IN THE BUFFER.
- PROVIDE 80 PERCENT SURVIVAL OF ALL INSTALLED TREES AND SHRUBS BY THE END OF THE 5 YEARS OF MONITORING.
- MAINTAIN LESS THAN 10 PERCENT NON-NATIVE, INVASIVE PLANT COVER OVER 200 SF IN PLANTED AREAS BY THE END OF THE 5 YEARS OF MONITORING.
- TREES AND SHRUBS THAT ARE DEAD OR SEVERELY DISTRESSED SHALL BE REPLACED ON A YEARLY BASIS DURING THE 5-YEAR MONITORING/MAINTENANCE PERIOD.

PERFORMANCE SECURITY

A PERFORMANCE SECURITY PAYMENT, BOND, OR OTHER INSTRUMENT IS REQUIRED TO GUARANTEE MITIGATION SUCCESS. GENERALLY, THE COSTS THAT ARE ASSOCIATED WITH INSTALLATION, MAINTENANCE, AND MONITORING ARE USED FOR PERFORMANCE SECURITY. ACTUAL COSTS MAY VARY DEPENDING ON SEVERAL FACTORS, INCLUDING; 1) SOURCE OF PLANT MATERIAL, 2) SITE PREPARATION WORK, 3) CONTRACT LANDSCAPER, AND 4) CONSULTANT HIRED FOR MONITORING. AN ESTIMATED COST OR USE OF CONTRACT BIDS FOR MITIGATION ENHANCEMENT WORK MAY BE USED TO DETERMINE A PERFORMANCE SECURITY.

THE CITY OF ISSAQUAH'S CODE SPECIFICALLY REQUIRES A MAINTENANCE / MONITORING BOND FOR THE 5-YEAR MONITORING PROGRAM. THE MAINTENANCE / MONITORING BOND WILL BE EQUAL TO 50% OF THE COST OF THE PLANTS, THE INSTALLATION LABOR, AND THE 5 YEARS OF MAINTENANCE AND MONITORING.

SCHEDULE

THE PREFERABLE TIME TO IMPLEMENT THE PLANTING PORTION OF THIS PLAN IS DURING THE FALL / WINTER SEASON. INSTALLATION OF STRUCTURES OR ANY SURFACE GRADING ACTIVITIES WITHIN STREAM BUFFERS WILL OCCUR PRIOR TO WET SEASON CONDITIONS. CLEARING AND HAND GRUBBING OF INVASIVE, WEEDY PLANTS CAN OCCUR DURING DRY PERIODS AS FEASIBLE. A QUALIFIED PROFESSIONAL (PROJECT ECOLOGIST OR LANDSCAPE ARCHITECT) WILL PROVIDE NECESSARY CONSTRUCTION OVERSIGHT RELATED TO INVASIVE PLANT REMOVAL, TREE PROTECTION, ENHANCEMENT PLANTING, AND MAINTENANCE AND MONITORING.

PRE-CONSTRUCTION MEETING

A PRE-CONSTRUCTION MEETING WILL BE HELD ON-SITE WITH APPROPRIATE PARTIES THAT MAY INCLUDE PROJECT ECOLOGIST, LANDSCAPE ARCHITECT, LANDSCAPE CONTRACTOR, PROJECT PROPONENT, AND CITY REPRESENTATIVE. DURING THIS MEETING, THE SITE CONDITIONS AND MITIGATION PLAN WILL BE REVIEWED SO THAT ALL PARTICIPANTS UNDERSTAND THE GOALS, SPECIFICATIONS, PLANTING SCHEDULE, AND EXTENT OF PREPARATION AND PLANTING. IF NECESSARY, PLANT SUBSTITUTIONS MAY BE APPROVED AT THIS TIME.

CONSTRUCTION OBSERVATION

FOLLOWING THE PRE-CONSTRUCTION MEETING, THE BUFFER ENHANCEMENT AREAS, EXISTING VEGETATION/TREES TO REMAIN, AND SPECIFIC PLANTINGS WILL BE STAKED OR MARKED AS NEEDED.

FOLLOWING SITE PREPARATION, THE LANDSCAPE CONTRACTOR WILL BEGIN THE PLANTING PHASE. IN AN ORDERLY MANNER, PLANTS WILL BE PLACED ACCORDING TO THE PLAN AND THE PLANTING SCHEDULE REVIEWED TO ASSURE THAT ALL MATERIALS ARE PLANTED AS REQUIRED. THE CONTRACTORS PERFORMING WORK IN THE BUFFER WILL BE RESPONSIBLE FOR AVOIDING UNNECESSARY DISTURBANCE TO EXISTING VEGETATION TO REMAIN WITHIN THE BUFFER AREAS.

THE PROJECT ECOLOGIST'S ROLE IS TO OVERSEE IMPLEMENTATION OF THE PLAN AND TO INSURE THAT ALL SPECIFICATIONS ARE MET. THE PROJECT ECOLOGIST WILL OBSERVE SITE PREPARATION AND PLANTING PHASES. CONSTRUCTION OVERSIGHT WILL BE PROVIDED FOR THE REMOVAL OF INVASIVE, NON-NATIVE PLANTS AND THE PROTECTION OF EXISTING VEGETATION TO REMAIN.

COMPLIANCE MONITORING

THE LANDSCAPE CONTRACTOR WILL NOTIFY THE PROJECT ECOLOGIST AND PROJECT PROPONENT WHEN PLANTING HAS BEEN COMPLETED. AT THAT TIME, THE ECOLOGIST WILL REVIEW THE PLAN AND COMPLETED MITIGATION AREAS TO ASSESS COMPLIANCE. LOCATIONS OF INSTALLED TREES AND SHRUBS THAT DIFFER FROM THE APPROVED PLANTING PLAN WILL BE NOTED OR MAPPED. A REPORT OF COMPLIANCE, INCLUDING ANY DEFICIENCIES AND RESOLUTIONS, WILL BE PREPARED FOR THE CITY.

ASSUMING INSTALLATION OCCURS AS PLANNED, THE FIRST COMPLIANCE-MONITORING EVENT WOULD LIKELY OCCUR IN 2017 TO VERIFY COMPLETE PLAN IMPLEMENTATION. SUBSEQUENT MONITORING, REPORTING, AND MAINTENANCE WILL FOLLOW THE MONITORING PROGRAM DURING THE 5 YEARS FOLLOWING INSTALLATION. LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR PLANT INSTALLATION AND MAINTENANCE DURING THE FIRST FULL YEAR AFTER THE APPROVED INSTALLATION.

MONITORING PROGRAM

AN ECOLOGIST (QUALIFIED PROFESSIONAL) WILL MONITOR THE MITIGATION AREAS FOLLOWING INSTALLATION, FOR AT LEAST 5 YEARS. OBSERVATIONS OF CRITICAL AREA ENHANCEMENT PLANTINGS WILL BE MADE DURING THE GROWING SEASON (6/1 TO 9/30) EACH YEAR WITH MONITORING PERFORMED AT THE END OF THE GROWING SEASON (9/1 TO 9/30). THE FINAL MONITORING EVENT WILL OCCUR AT THE END OF THE GROWING SEASON OF YEAR 5 (9/1 TO 9/30). YEARS 1 AND 2 WILL REQUIRE A TOTAL OF TWO MONITORING SITE VISITS DURING THE GROWING SEASON TO SCHEDULE AND DIRECT MAINTENANCE NEEDS.

AT THE DIRECTION OF THE PROJECT ECOLOGIST, THE PROPONENT (OWNER) WILL REPLACE ALL TREES AND SHRUBS THAT ARE DEAD OR DYING FOR EACH MONITORING YEAR DURING THE 5-YEAR MONITORING PERIOD. UP TO 20 PERCENT OF ANY STRATUM CAN BE COMPOSED OF DESIRABLE NATIVE VOLUNTEERS WHEN MEASURING COVER. NO MORE THAN 10% COVER OF NON-NATIVE OR OTHER INVASIVE PLANTS, E.G. HIMALAYAN BLACKBERRY, JAPANESE KNOTWEED, EVERGREEN BLACKBERRY, REED CANARYGRASS, SCOTS BROOM, ENGLISH IVY, MORNING GLORY, ETC. IS PERMISSIBLE IN ANY MONITORING YEAR. BONDHOLDERS ARE ENCOURAGED TO MAINTAIN MITIGATION SITES WITHIN THESE STANDARDS THROUGHOUT THE MONITORING PERIOD TO AVOID CORRECTIVE MEASURES.

DURING THE GROWING SEASON TO THE END OF THE MONTH OF SEPTEMBER, MONITORING WILL BE AS FOLLOWS:

- COUNT ALL INSTALLED TREES AND SHRUBS IN THE MITIGATION AREA FOR MORTALITY/SURVIVAL.
- ASSESS THE HEALTH OF ALL INSTALLED TREES AND SHRUBS IN THE MITIGATION AREA FOR ANY POTENTIAL DISEASE OR INFESTATION.
- IDENTIFY SIGNIFICANT COVER OF WEEDS, BY SPECIES, AND REQUIRE MAINTENANCE OR REMOVAL IN ORDER TO PROMOTE THE GROWTH AND SURVIVAL OF ALL INSTALLED PLANTS.
- PHOTOGRAPH THE ENHANCED BUFFER AREAS FROM AT LEAST FOUR LOCATIONS. THE LOCATION AND DIRECTION OF EACH PHOTOGRAPH SHALL BE CONSISTENT AMONG MONITORING PERIODS, BE REPRESENTATIVE OF ENHANCED / RESTORED AREAS, AND BE REPRESENTED ON A MAP (I.E., PROPERLY LOCATED AND LABELED).

SUBMIT THE RESULTS OF ANNUAL MONITORING TO THE CITY OF ISSAQUAH WITHIN 30 DAYS FOLLOWING FIELD MONITORING OR BY OCTOBER 31 EACH YEAR WHICHEVER DATE IS EARLIER. (+)

CONTINGENCY PLAN

AT THE DIRECTION OF THE PROJECT ECOLOGIST, THE PROPONENT (OWNER) WILL REPLACE ALL TREES AND SHRUBS THAT ARE DEAD OR DYING DURING EACH MONITORING YEAR OF THE 5-YEAR MONITORING PERIOD. SHOULD THE DESIRED MITIGATION GOALS AND PERFORMANCE STANDAARDS NOT BE ACHIEVED, A DETERMINATION WILL BE MADE BY A CITY REPRESENTATIVE, THE PROJECT ECOLOGIST, AND THE PROJECT PROPONENT TO IMPLEMENT A CONTINGENCY PLAN. THE ECOLOGIST WILL ACCESS REASONS FOR REPEATED FAILURE AND MAKE RECOMMENDATIONS TO THE CITY.

POTENTIAL CONTINGENCY IS TWO-FOLD, INCLUDING (1) TO REPLACE PLANTS THAT HAVE NOT SURVIVED AT ACCEPTABLE PERFORMANCE STANDARDS DURING THE 5-YEAR MONITORING PERIOD, AND (2) TO DETERMINE AND RECTIFY THE CAUSE OF SIGNIFICANT MORTALITY (50 PERCENT OR GREATER) OF ANY MITIGATION AREA OR PLANT SPECIES. PLAN DESIGN AND IMPLEMENTATION WILL PROCEED WITH CITY APPROVAL, AND IF NEEDED, ADDITIONAL MAINTENANCE AND MONITORING.

SPECIFICATIONS

SITE PREPARATION

A PRE-CONSTRUCTION MEETING WILL BE HELD WITH PARTICIPATING CONTRACTORS, CITY REPRESENTATIVE, AND PROJECT ECOLOGIST BEFORE WORK COMMENCES IN THE STREAM BUFFER MITIGATION AREAS (DEPICTED ON SHEET L4.01). THE APPROVED PLAN WILL BE REVIEWED SO THAT ALL PARTICIPANTS UNDERSTAND THE GOALS, SPECIFICATIONS, AND THE EXTENT OF CLEARING, GRUBBING, AND PLANTING. THIS PLAN INCLUDES ENHANCEMENT PLANTING IN AN AREA WHERE A SMALL QUANTITY OF DESIRABLE NATIVE PLANTS ARE LOCATED. THE PLAN ALSO INCLUDES ENHANCEMENT THAT INVOLVES MASS CLEARING OF NON-NATIVE SPECIES. CONSTRUCTION OVERSIGHT FROM THE PROJECT ECOLOGIST IS NECESSARY TO IDENTIFY EXISTING VEGETATION TO REMAIN.

CONTRACTOR WILL BE RESPONSIBLE FOR AVOIDING DISTURBANCE TO EXISTING VEGETATION TO REMAIN. IN AREAS OF EXISTING VEGETATION TO REMAIN, LANDSCAPE CONTRACTOR WILL REMOVE BLACKBERRY AND OTHER SPECIFIED INVASIVE SPECIES BY HAND OR LIGHT MACHINERY, AS SPECIFIED, WITH MINIMAL DISTURBANCE TO THE SAVED VEGETATION. SURFACE GRUBBING WILL BE NECESSARY TO REMOVE INVASIVE PLANT COVER AND THE MAJOR ROOT BALLS. THE TOPSOIL FROM EXCAVATION IN AREAS OF BLACKBERRY AND OTHER WEEDY PLANTS WILL NOT BE RE-USED WITHIN THE ENHANCEMENT MITIGATION SITE.

CONSTRUCTION MUST BE PERFORMED ACCORDING TO CITY STANDARDS, CODES, AND PERMIT CONDITIONS. IF NECESSARY OR REQUIRED BY CITY PERMIT, EROSION CONTROL MEASURES WILL BE INSTALLED ON THE DOWNSLOPE SIDE OF CLEARING WORK. THE APPLICANT IS RESPONSIBLE FOR OBTAINING REQUIRED PERMITS BEFORE THE START OF CONSTRUCTION.

1. FLAG VEGETATION TO REMAIN

UNLESS REQUIRED FOR APPROVED IMPROVEMENTS, EXISTING TREES IN THE BUFFER MITIGATION AREA WILL NOT BE DISTURBED. IF A SAVED/RETAINED TREE IS DAMAGED DURING CONSTRUCTION IT WILL BE TREATED AS SOON AS POSSIBLE. THE PROJECT ECOLOGIST WILL BE NOTIFIED IMMEDIATELY AND WOUND TREATMENT WILL BE PERFORMED. WOUND TREATMENT INCLUDES EVENLY CUTTING BROKEN BRANCHES AND EXPOSED ROOTS, AND COVERING DAMAGED STEM CAMBIUM TO PROMOTE HEALING. INJURED TREES WILL BE WATERED AND IF NECESSARY, ADDITIONAL MEASURES TAKEN TO AID IN TREE SURVIVAL.

2. CLEAR AND GRUB

THE GENERAL CONTRACTOR OR LANDSCAPE CONTRACTOR WILL CLEAR AND GRUB TARGETED INVASIVE PLANT SPECIES WITHIN THE STREAM BUFFER WITH THE EXCEPTION OF EXISTING VEGETATION TO REMAIN. CLEARED AND GRUBBED VEGETATION WILL BE EXPORTED FROM THE SITE. PARTICULAR CARE MUST BE PROVIDED TO REMOVE TOPS AND THE ROOTS OF INVASIVE PLANTS TO A MINIMUM DEPTH OF 10 INCHES. INVASIVE/EXOTIC PLANT SPECIES TO BE REMOVED MAY INCLUDE: JAPANESE KNOTWEED, ENGLISH IVY, HIMALAYAN/EVERGREEN BLACKBERRY, HEDGE BINDWEED (MORNING GLORY), AND CREEPING NIGHTSHADE.

A VEGETATED STRIP OF AT LEAST 4 FEET IN WIDTH WILL BE MAINTAINED DIRECTLY ABOVE THE STREAM'S ORDINARY HIGH WATER MARK (EDGE OF STREAM). NO CLEARING OR DISTURBANCE WITHIN 4 FEET OF NORTH FORK ISSAQUAH CREEK.

PLANTING SPECIFICATIONS

THE PLANTINGS IN THE STREAM BUFFER ENHANCEMENT AREA MUST BE INSTALLED ACCORDING TO THIS PLAN. INSTALL TREES AND SHRUBS INDIVIDUALLY AS INDICATED ON THE MITIGATION PLANTING PLAN AS ACCURATELY AS POSSIBLE. IT IS RECOGNIZED THAT ACTUAL PLANTING LOCATIONS MAY VARY FROM THOSE SHOWN DUE TO APPROXIMATE LOCATIONS OF EXISTING VEGETATION TO REMAIN. HOWEVER, PLANT LOCATION AND SPECIES CHANGES WILL REQUIRE APPROVAL FROM THE PROJECT ECOLOGIST.

ALL PLANTS AND PLANTING ACTIVITIES SHALL CONFORM TO NORMAL LANDSCAPE INDUSTRY STANDARDS. ONLY SOUND, HEALTHY, VIGOROUS PLANTS FREE OF DEFECTS, DISEASE, AND INFESTATIONS SHALL BE USED. PLANT MATERIALS WILL BE NATIVE TO THE PACIFIC NORTHWEST, PREFERABLY FROM THE PUGET SOUND REGION AND LOCALLY GROWN, CONTAINERIZED UNLESS OTHERWISE SPECIFIED. PLANT MATERIALS WILL BE HEALTHY, IN VIGOROUS GROWING CONDITION, FREE FROM DISEASE INFESTATION, AND CORRECT SIZE, NAME, AND VARIETY. THE PROJECT ECOLOGIST RESERVES THE RIGHT TO REQUIRE REPLACEMENT OR SUBSTITUTION OF ANY UNSUITABLE PLANTS.

SUBSTITUTIONS WILL BE SUBJECT TO APPROVAL BY THE PROJECT ECOLOGIST PERFORMING CONSTRUCTION MANAGEMENT AND THE CITY OF ISSAQUAH. BARE-ROOT STOCK THAT IS EQUAL IN SIZE TO CONTAINER CAN BE USED AS A SUBSTITUTE, WHEN AVAILABLE, AND WITH PRIOR APPROVAL.

TREES WILL HAVE UNIFORM BRANCHING WITH THE CENTRAL LEADER INTACT AND UNDAMAGED. CONTAINER STOCK WILL BE FULLY ROOTED BUT NOT ROOT-BOUND. PLANT MATERIAL WITH DAMAGED ROOT ZONES OR BROKEN ROOT BALLS WILL NOT BE ACCEPTED.

SHRUBS WILL BE THE MINIMUM HEIGHT AS SPECIFIED IN THE PLANT SCHEDULE AND IF DECIDUOUS, HAVE A MINIMUM OF THREE CANES.

PLANTING WILL OCCUR BETWEEN OCTOBER AND MARCH WITH THE FALL TO EARLY WINTER PERIOD BEING THE PREFERRED TIME. THE PROJECT ECOLOGIST WILL INSPECT PLANT MATERIAL AND APPROVE THE PLANTING LOCATIONS OF ALL PLANTS AND PLANT GROUPINGS PRIOR TO PLANTING.

PLANT INSTALLATION

DIG, PACK, TRANSPORT, AND HANDLE ALL PLANTS WITH CARE TO ENSURE PROTECTION FROM INJURY. STORE PLANTS IN A MANNER THAT WILL NOT ALLOW THE ROOTS TO DRY OUT. KEEP PLANTS MOIST AND SHADED UNTIL THE ACTUAL TIME OF INSTALLATION. BEFORE AND AFTER PLANTING SATURATE THE SOIL IN THE PLANTING AREA TO PREVENT CAPILLARY STRESS. PLANTING IN THE WETLAND AREA MAY NOT NEED WATERING DEPENDING ON TIME OF YEAR, WEATHER CONDITIONS, AND DEPTH TO SHALLOW GROUNDWATER.

PLANT SPACING FOR LISTED SPECIES IS TO BE RANDOM (NATURALISTIC) AND NOT IN A GRID PATTERN. USE PLANTING DETAILS SHOWN ON SHEET M3 WITH THE FOLLOWING ADDITIONAL NOTES:

1. EXCAVATE PLANTING PITS AS SHOWN IN PLANTING DETAILS. REMOVE ANY NATIVE SOIL THAT CONTAINS BLACKBERRY ROOTS. PLANT TREE OR SHRUB 1/2 INCH HIGHER THAN DEPTH GROWN AT NURSERY AND LOOSEN ROOTBALL OF CONTAINER PLANTS PRIOR TO PLANTING.

2. BACKFILL PLANTING PITS WITH WEED-FREE, AMENDED COMPOST SOIL. IN BUFFER AREAS ADD SOIL MOISTURE RETENTION AGENT, SUCH AS HYDRATED SOILMOIST, OR APPROVED EQUAL. ADD FERTILIZER - USE SLOW-RELEASE, HIGH NITROGEN (21-3-7) CONTENT. FOLLOW MANUFACTURER APPLICATION RATES FOR SOILS MOISTURE RETENTION AGENT AND FERTILIZER.

3. A 3-INCH LAYER OF WEED-FREE ORGANIC COMPOST MULCH SHALL BE PLACED AROUND THE BASE OF PLANTED TREES (MINIMUM 36" DIAMETER RING) AND SHRUBS (MINIMUM 24" DIAMETER RING) FOR EROSION CONTROL, WEED PREVENTION, AND MOISTURE RETENTION. THE ENTIRE MITIGATION AREA WILL BE CLEARED OF INVASIVE SPECIES AND MULCHED TO A DEPTH OF 4 INCHES WITH WEED-FREE WOOD / BARK MULCH OR DRIED WOOD CHIPS.

4. STAKE TREES ONLY IF NECESSARY (DROOPING OR LEANING) OR IN EXPOSED AREAS.

5. IF NECESSARY, WATER EACH PLANT THOROUGHLY AFTER PLANTING. SLOPE AREA PLANTINGS WILL REQUIRE MORE ATTENTION TO WATERING FOR MITIGATING POTENTIAL DROUGHT CONDITIONS.

MAINTENANCE

MAINTENANCE WILL BE CONDUCTED ON A ROUTINE BASIS FOR 5 YEARS FOLLOWING INSTALLATION. A QUALIFIED PROFESSIONAL WILL DETERMINE SPECIFIC MAINTENANCE ACTIVITIES. THE MONITORING PROGRAM'S SCHEDULE WILL ASSURE MAINTENANCE AND SUCCESS CRITERIA ARE ACCOMPLISHED PRIOR TO OR AT THE END OF THE MITIGATION PERIOD. CONTINGENCY OR REMEDIAL MEASURES WILL BE IMPLEMENTED ON AN AS-NEEDED BASIS AT THE DIRECTION OF THE PROJECT ECOLOGIST OR CITY REPRESENTATIVE. MAINTENANCE OF THE BUFFER ENHANCEMENT AREAS INCLUDES THE FOLLOWING:

- WATER THE NEW PLANTINGS WEEKLY WITH 1 INCH OF WATER FROM JUNE 15 THROUGH SEPTEMBER 15, OR AS NEEDED, DURING THE FIRST AND SECOND YEARS AFTER THE PLANTS ARE INSTALLED.
- REMOVE WEEDS AND PROPERLY DISPOSE OF OFF-SITE FOR 5 YEARS AFTER INSTALLATION. WEED MAINTENANCE SHALL OCCUR PRIOR TO JULY 1 ON A YEARLY BASIS. WEEDS MAY INCLUDE NON-NATIVE VEGETATION SUCH AS HIMALAYAN BLACKBERRY (RUBUS DISCOLOR), REED CANARY GRASS (PHALARIS ARUNDINACEA), EVERGREEN BLACKBERRY (RUBUS LACINIATUS), SCOT'S BROOM (CYTISUS SCOPARIUS), ENGLISH IVY (HEDERA HELIX), MORNING GLORY (CONVOLVULUS ARVENSIS), JAPANESE KNOTWEED (POLYGONUM CUSPIDATUM) ETC.
- REPLACE TREE AND SHRUBS, WITH SAME AS SPECIFIED IN THIS PLAN, THAT DIE WITHIN 5 YEARS AFTER INSTALLATION ON A YEARLY BASIS.

MAINTENANCE IS TO BE PROVIDED BY PROJECT'S LANDSCAPE CONTRACTOR FOR ONE YEAR FOLLOWING CONSTRUCTION / INSTALLATION THAT BEGINS AT FINAL ACCEPTANCE OF THE PLAN. TO MAINTAIN THE HEALTHY GROWTH OF TREES AND SHRUBS, THE FOLLOWING ACTIONS MAY BE REQUIRED: REPAIR TREE STAKES, RE-SET PLANTS TO PROPER GRADE, CONTROL INVASIVE PLANTS, AND PROVIDE ADEQUATE WATER APPLICATION THROUGH THE FIRST GROWING SEASON. TREE STAKES WILL BE REMOVED AT THE END OF THE ONE-YEAR MAINTENANCE PERIOD.

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APPROVAL CONDITIONS
BY DATE

APPROVED BY 56th–221st DEVELOPMENT, LLC FOR REVIEW BY THE DSD
BY DATE

PLANNING		ENGINEERING	
DSD Planner	Date	DSD Engineer	Date
☐ Reviewed & Determined to be not applicable		☐ Reviewed & Determined to be not applicable	
DSD LS Arch.	Date	DSD Engineer	Date
☐ Reviewed & Determined to be not applicable		☐ Reviewed & Determined to be not applicable	
DSD Program Manager	Date		
Public Works Engr Director	Date		

ONLY SHEETS WITH AUTHORIZING SIGNATURES HAVE BEEN APPROVED FOR CONSTRUCTION

REVISIONS | NO. | DATE

PROJECT ECOLOGIST:
C. GARY SCHULZ
7700 S. LAKERIDGE DR.
SEATTLE, WA 98178
206-920-5489

CORE DESIGN
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Bellevue, Washington 98007
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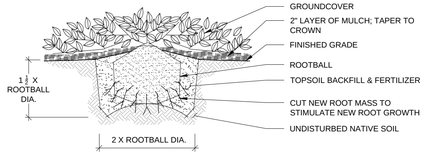
MITIGATION SCHEDULE AND NOTES
5655 221ST STREET - ISSAQUAH
DUDLEY SMILES
4127 93RD PLACE SE
MERCER ISLAND, WA 98040

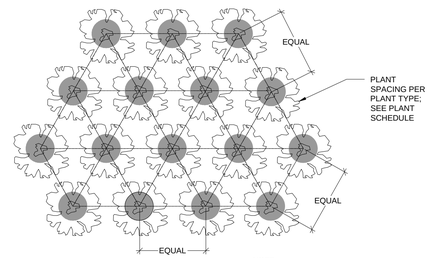
DATE	MAY 2016
DESIGNED	KRISTI PARK
DRAWN	KRISTI PARK
APPROVED	JOSHUA P. BEARD
	KEVIN VANDERZANDEN, PLS PROJECT MANAGER

SHEET L4.02 OF 10
PROJECT NUMBER 14047D



DETAIL: PLANTING GROUNDCOVER

SCALE: NOT TO SCALE

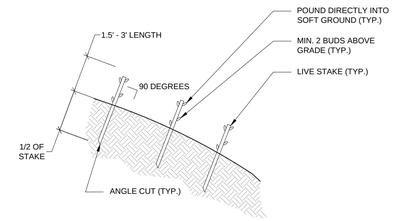


NOTE:
TO AVOID LANDSCAPE INTRUSION INTO PATHS, THE FOLLOWING PLANTING SPACING OFF-SETS FROM EDGE OF ALL PATHS, DRIVES, ACCESS ROUTES, ETC. SHALL BE MET:

GROUND COVER: 18"
SMALL SHRUBS (UNDER 3' TALL): 30"
MEDIUM SHRUBS (FROM 3' TALL TO 6'): 42"
LARGE SHRUBS (OVER 6' TALL): 48"

DETAIL: PLANTING GROUNDCOVER SPACING

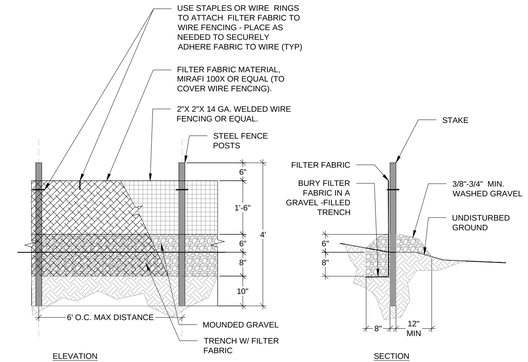
SCALE: NOT TO SCALE



NOTES:
1. INSTALL ONLY WHEN CUTTINGS ARE DORMANT APPROXIMATELY OCTOBER THROUGH MARCH.
2. STAKES MUST BE FRESH AND KEPT MOIST. PREPARE & INSTALL WITHIN 24 HOURS.
3. DO NOT SPLIT STAKES DURING PLACEMENT.
4. STAKES SHALL BE 3/4" - 1 1/2" DIAMETER OVER ENTIRE LENGTH.
5. PLANTING METHODS:
   FOR HARD SOIL: CREATE PILOT HOLES BEFORE PLACING STAKES IN GROUND
   FOR SOFT SOIL: TAMP SOIL IN VICINITY OF PLACED STAKE TO SECURE AND STABILIZE
6. 4' MINIMUM LENGTH OF LIVE STAKE

DETAIL: LIVE STAKE PLANTING

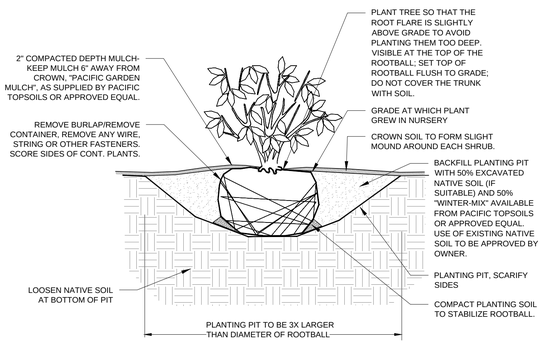
SCALE: NOT TO SCALE



NOTES:
INSTALL SILT FENCE PRIOR TO ANY DEMOLITION, EARTH-WORK, CLEARING, OR SHRUB VEGETATION REMOVAL OR ANY CONSTRUCTION RELATED ACTIVITIES.

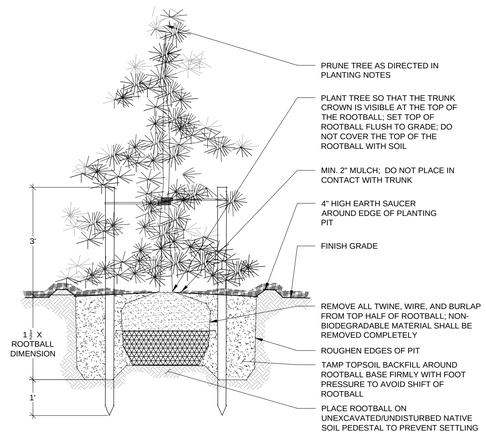
DETAIL: SILT FENCE DETAIL

SCALE: NOT TO SCALE



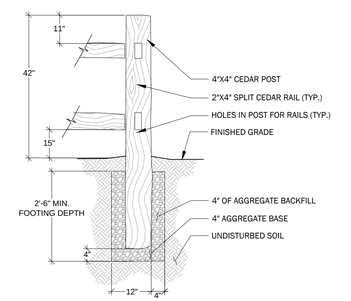
DETAIL: TYPICAL SHRUB PLANTING

SOURCE: CITY OF ISSAQUAH SCALE: NOT TO SCALE



DETAIL: PLANTING CONIFER TREE

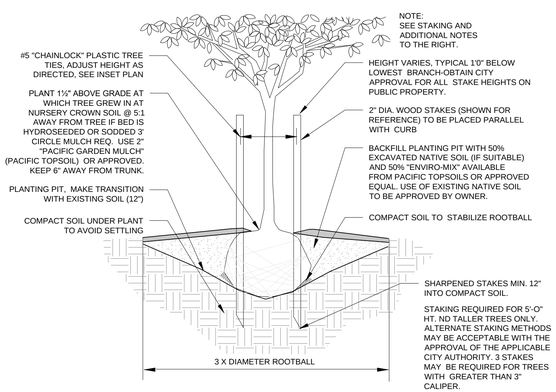
SCALE: NOT TO SCALE

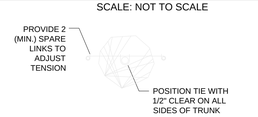


NOTE:
DETAIL PROVIDED IF FENCING IF REQUIRED BY THE CITY OF ISSAQUAH OR DESIRED BY THE CLIENT. REFER TO THE MITIGATION PLAN FOR MORE INFORMATION.

DETAIL: SPLIT RAIL FENCE

SCALE: NOT TO SCALE





STAKING PLAN

STAKING REQUIRED FOR 5'-0" HT. AND TALLER TREES ONLY. ALTERNATE STAKING METHODS MAY BE ACCEPTABLE WITH THE APPROVAL OF THE APPLICABLE CITY AUTHORITY. 3 STAKES MAY BE REQUIRED FOR TREES WITH GREATER THAN 3" CALIPER.

ADDITIONAL NOTES (APPLY TO ALL TREE PLANTING DETAILS):

1. CONDUCT TREE PIT DRAINAGE TEST PRIOR TO PLANTING. IF WATER IN HOLE DROPS 1/2" PER HOUR, DRAINAGE IS ACCEPTABLE. OWNER'S REP MUST BE PRESENT.
2. SPECIAL GRADING AND/OR PIT DRAINAGE WILL BE REQUIRED PER DTL. IF PERCOLATION IS A PROBLEM.
3. MAINTAIN THE TREE IN GOOD HEALTH AFTER DELIVERY. HEAL IN W/ DAMP SAWDUST IF NOT IMMEDIATELY PLANTED.
4. REMOVE ANY BURLAP WIRE, STRING OR OTHER FASTENER FROM ENTIRE ROOTBALL PRIOR TO PLACEMENT.
5. PRUNE PER ANSI 300A PART 1 STANDARDS
6. PROVIDE AN ADDITIONAL 30%%% INCREASE TO EACH CHAINLOCK TREE TIE TO ALLOW FOR FUTURE LOOSENING
7. PLANT TREE SO THAT THE ROOT FLARE IS SLIGHTLY ABOVE GRADE TO AVOID PLANTING THEM TOO DEEP

DETAIL: TYPICAL TREE PLANTING/STAKING

SOURCE: CITY OF ISSAQUAH SCALE: NOT TO SCALE

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APPROVAL CONDITIONS

BY DATE

APPROVED BY 56th-221st DEVELOPMENT, LLC FOR REVIEW BY THE DSD

BY DATE

PLANNING	ENGINEERING
DSD Planner Date	DSD Engineer Date
☐ Reviewed & Determined to be not applicable	☐ Reviewed & Determined to be not applicable
DSD LS Arch. Date	DSD Engineer Date
☐ Reviewed & Determined to be not applicable	☐ Reviewed & Determined to be not applicable

DSD Program Manager Date

Public Works Engr Director Date

ONLY SHEETS WITH AUTHORIZING SIGNATURES HAVE BEEN APPROVED FOR CONSTRUCTION

DATE	REVISIONS

PROJECT ECOLOGIST:
C. GARY SCHULZ
7700 S. LAKERIDGE DR.
SEATTLE, WA 98178
206-920-5489

14711 NE 29th Place, Suite 101
Bellevue, Washington 98007
425.883.7877 Fax 425.883.7963
CORE DESIGN
ENGINEERING - PLANNING - SURVEYING

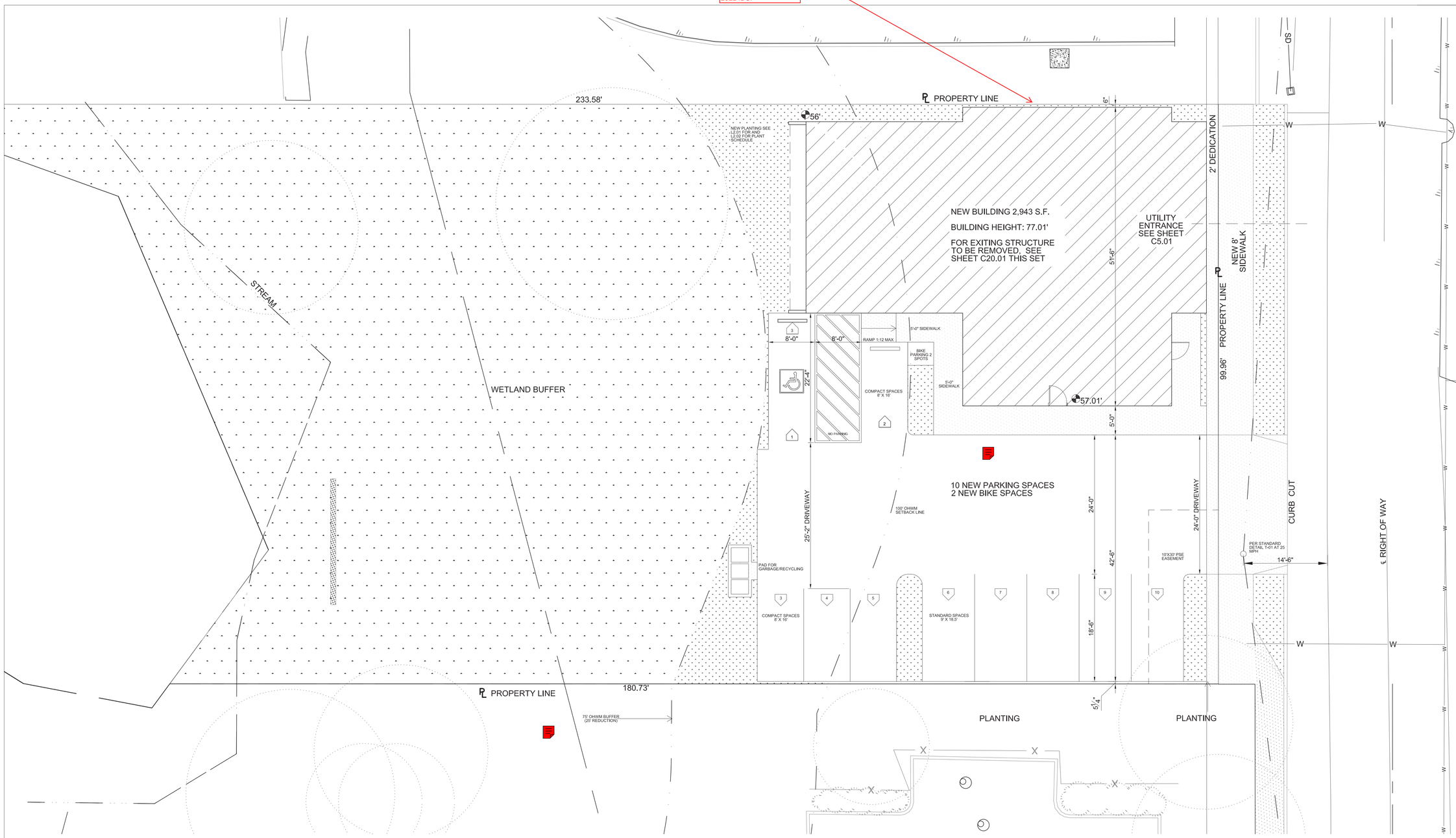
MITIGATION DETAILS
5655 221ST STREET - ISSAQUAH
DUDLEY SMILES
4127 93RD PLACE SE
MERCER ISLAND, WA 98040

DATE MAY 2016
DESIGNED KRISTI PARK
DRAWN KRISTI PARK
APPROVED JOSHUA P. BEARD
KEVIN VANDERZANDEN, PLS
PROJECT MANAGER

SHEET L4.31 OF 10

PROJECT NUMBER 14047D

This wall must be constructed as a 1-Hour rated wall. Provide cross-referenced details on the plans. Table 602, 2012 IBC.



Site Plan

SCALE: 1/16" = 1'-0"

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SITE PLAN

Job #: 127

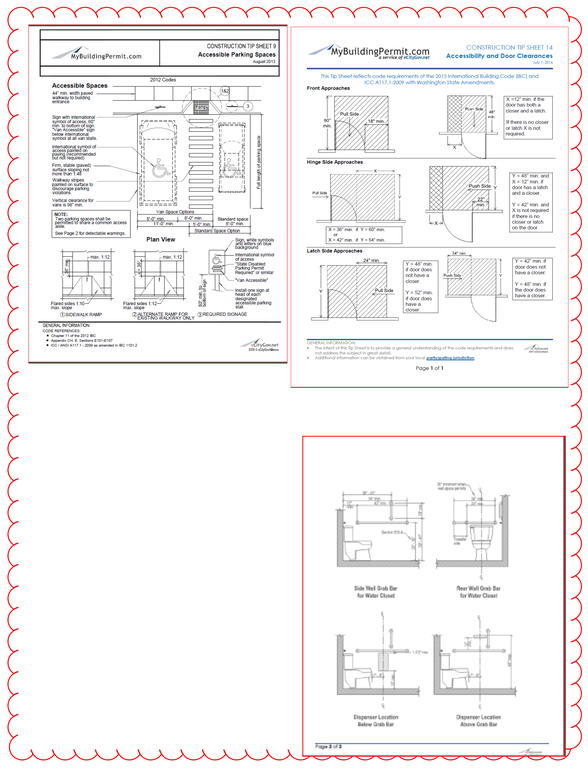
A1.0
Sheet

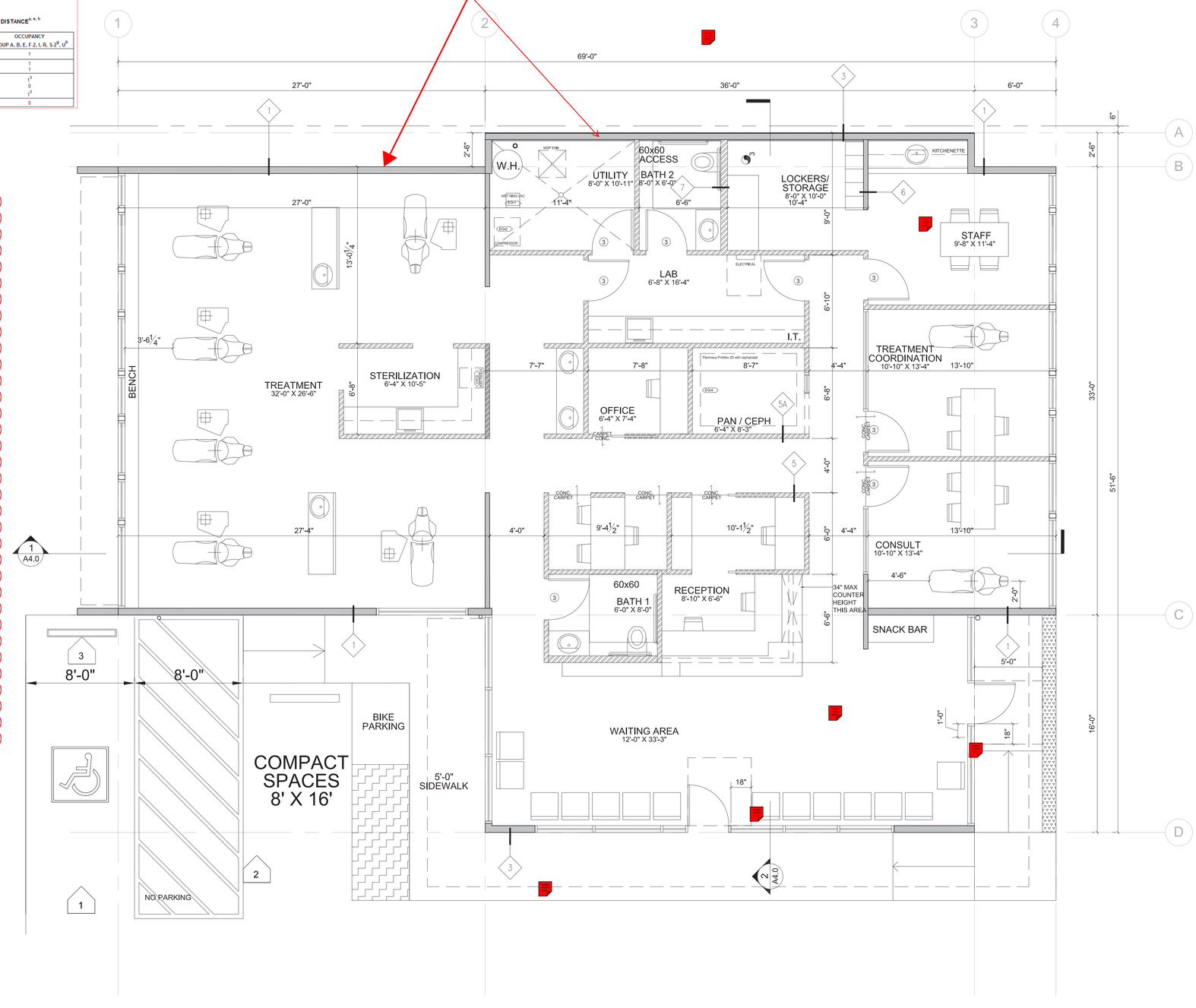
This wall must be constructed as a 1-hour rated wall. Provide cross-referenced 1-hour rated assemble details on the plans. Table 602 2012 IBC. We would suggest you use the Gypsum Association Fire Resistance Design Manual or other approved listed 1-hour exterior rated wall assembly.

SECTION 602
CONSTRUCTION CLASSIFICATION

TABLE 602
FIRE-RESISTANCE RATING REQUIREMENTS FOR EXTERIOR WALLS BASED ON FIRE SEPARATION DISTANCE[a, e, h]

FIRE SEPARATION DISTANCE = X (feet)	TYPE OF CONSTRUCTION	OCCUPANCY GROUP H[f]	OCCUPANCY GROUP F-1, M, S-1[g]	OCCUPANCY GROUP A, B, E, F-2, I, R, S-2[g], U[b]
X < 5[c]	All	3	2	1
5 ≤ X < 10	IA Others	3 2	2 1	1 1
10 ≤ X < 30	IA, IB IIB, VB Others	2 1 1	1 0 1	1[d] 0 1[d]
X≥30	All	0	0	0





Plan

SCALE: 1/4" = 1'-0"
2,943 S.F.

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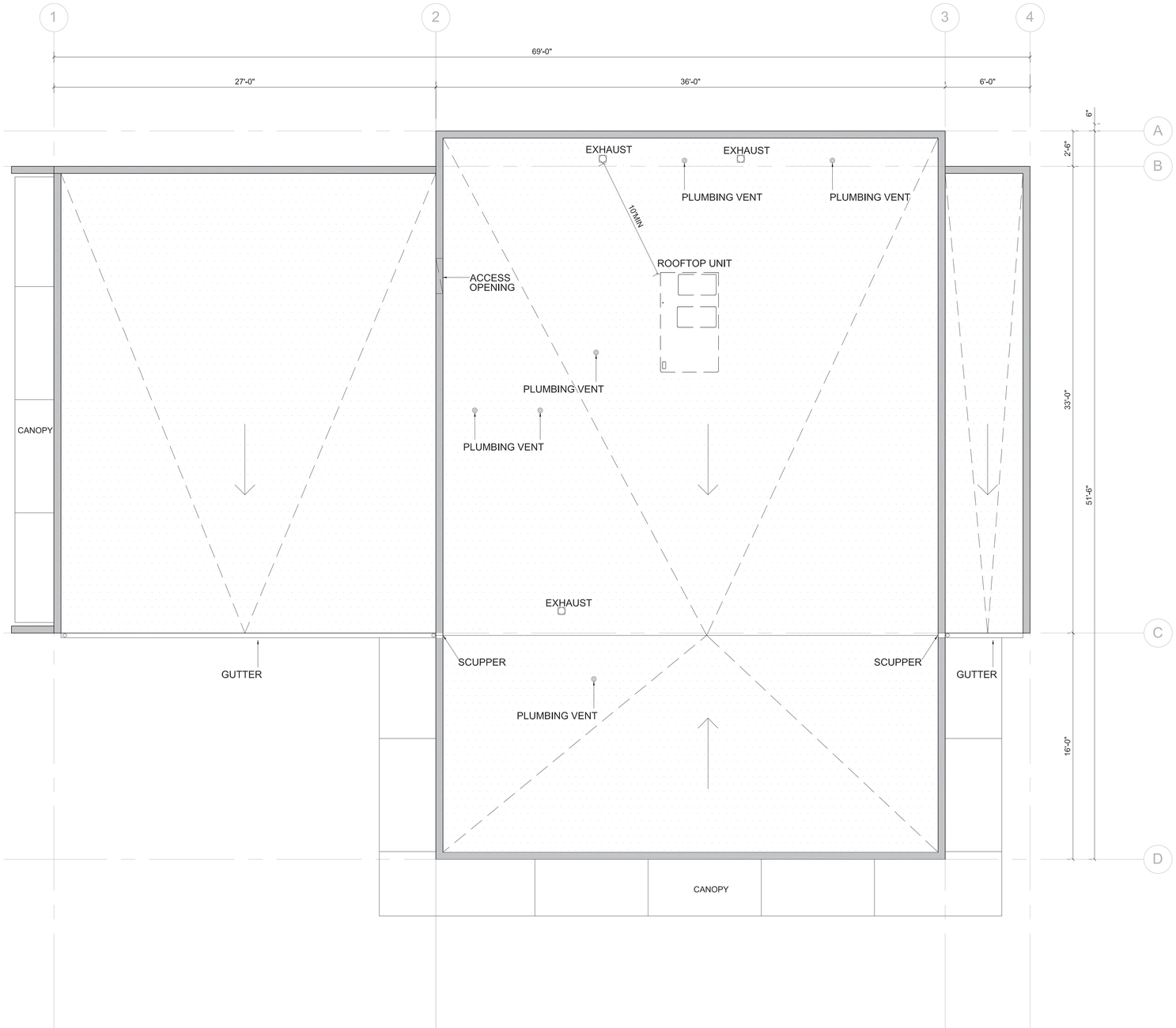
Floor Plan

Job #: 127

A2.1
Sheet



Roof Plan

SCALE: 1/4" = 1'-0"
2,943 S.F.

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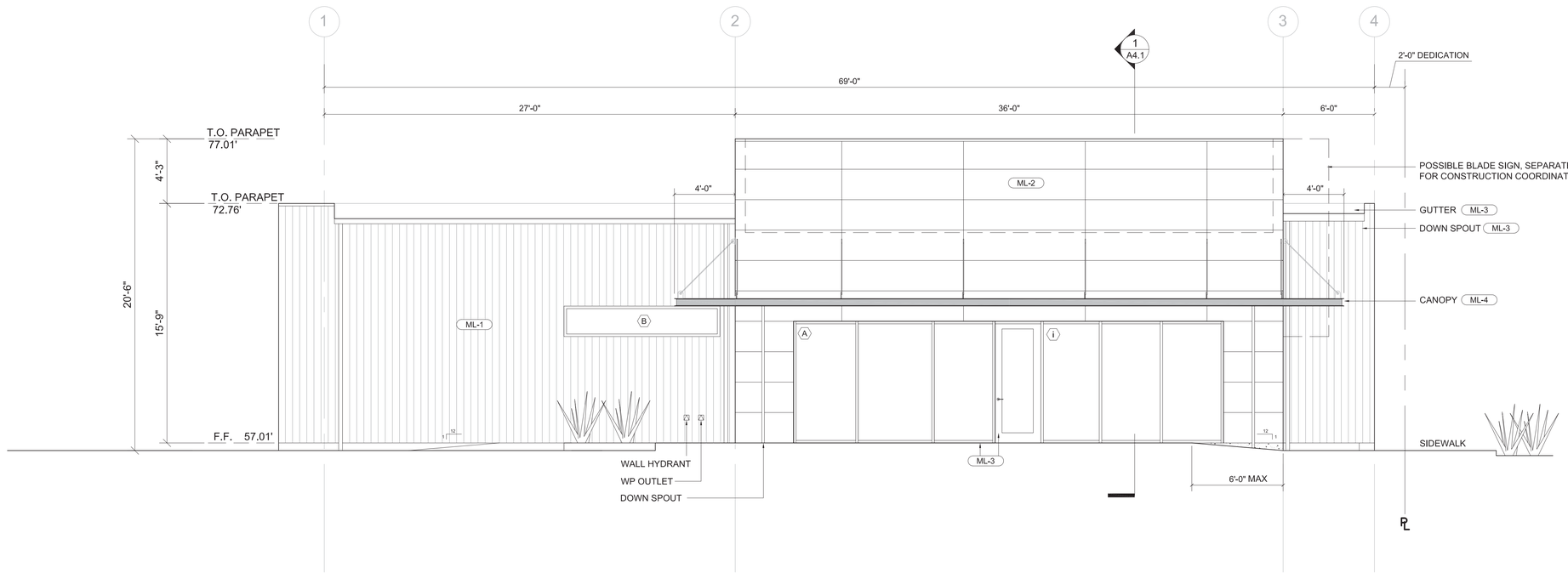
Floor Plan

Job #: 127

A2.2
Sheet



South Elevation

SCALE: 1/4" = 1'-0"

MATERIAL SCHEDULE

TAG	MATERIAL	COLOR/FINISH	MANUFACTURER	REMARKS
ML-1	VERTICAL CEDAR SIDING	EBONY STAIN		T.K.,STAIN
ML-2	CEMENTITIOUS PANELS	WHITE	JAMES HARDIE	2'X8'
ML-3	ALUMINUM	CLEAR ANODIZED	CUSTOM	MATCH WINDOWS
ML-4	PAINTED STEEL	BLACK	CUSTOM	
ML-5	TPO MEMBRANE ROOFING	WHITE/LIGHT GREY	T.B.D.	CLASS A

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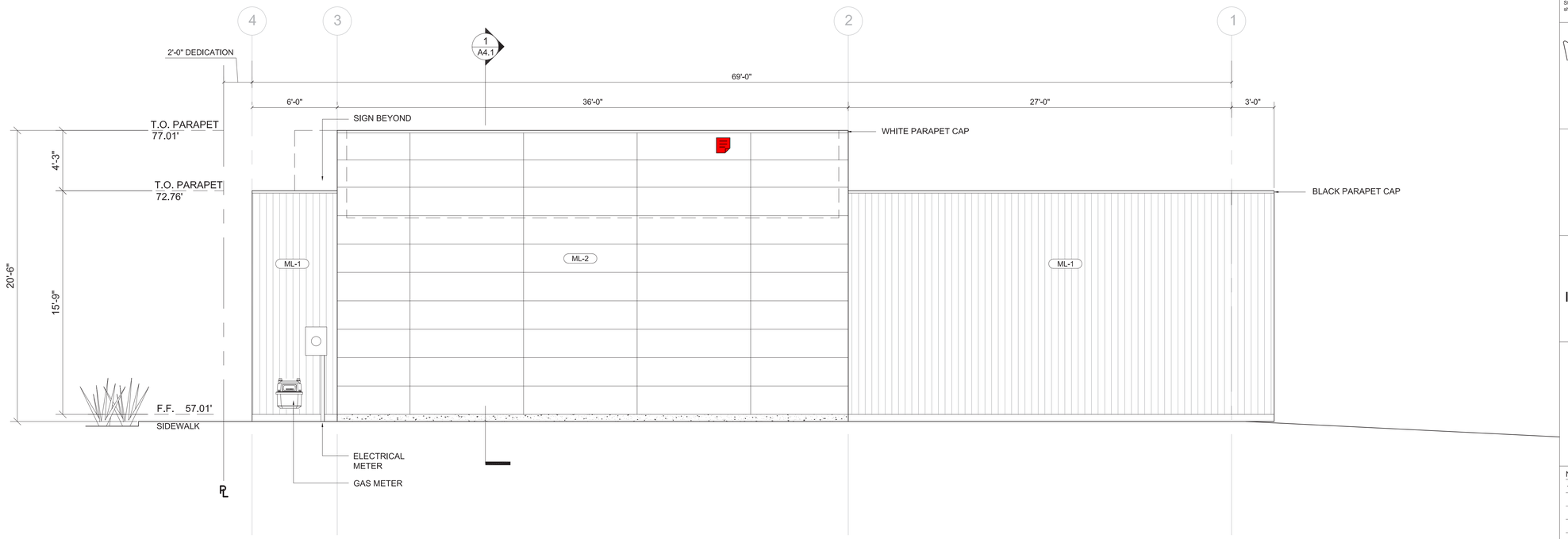
Elevation

Job #: 127

A3.0
Sheet



North Elevation

SCALE: 1/4" = 1'-0"

MATERIAL SCHEDULE				
TAG	MATERIAL	COLOR/FINISH	MANUFACTURER	REMARKS
ML-1	VERTICAL CEDAR SIDING	EBONY STAIN		T.K.,STAIN
ML-2	CEMENTITIOUS PANELS	WHITE	JAMES HARDIE	2'X8'
ML-3	ALUMINUM	CLEAR ANODIZED	CUSTOM	MATCH WINDOWS
ML-4	PAINTED STEEL	BLACK	CUSTOM	
ML-5	TPO MEMBRANE ROOFING	WHITE/LIGHT GREY	T.B.D.	CLASS A

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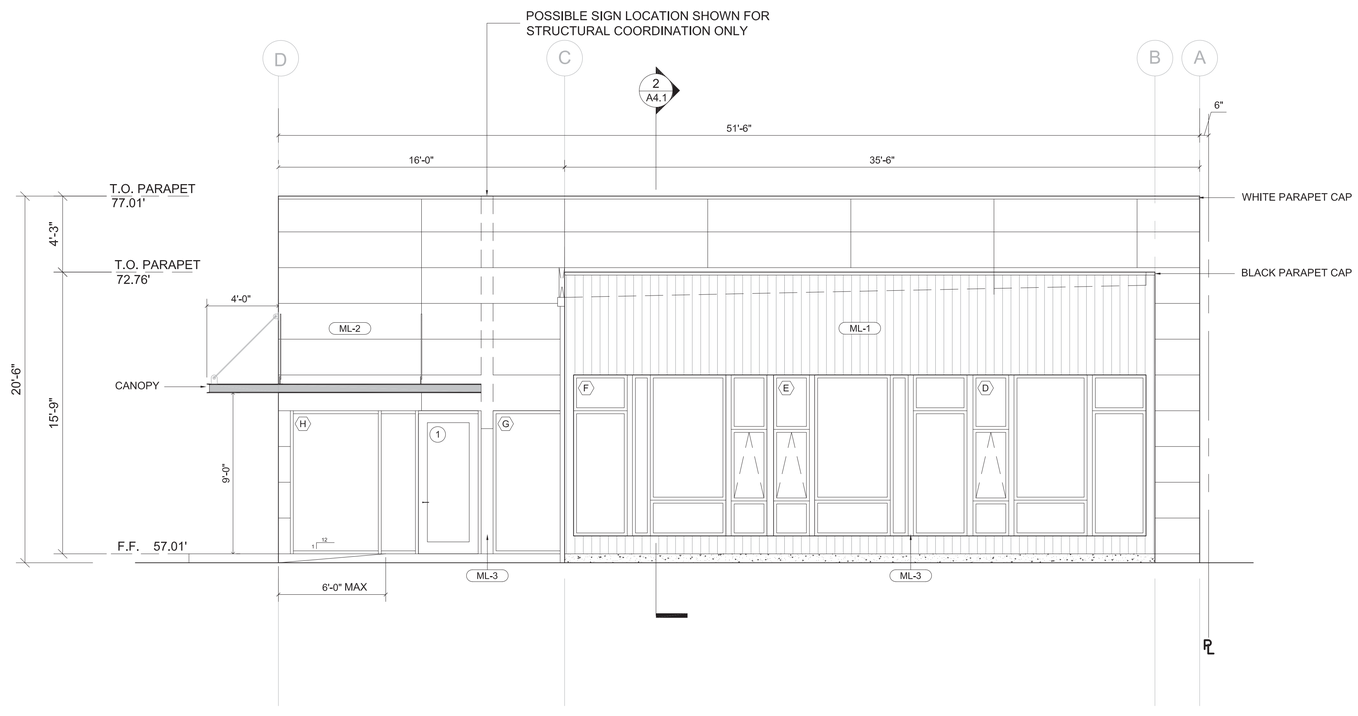
Elevation

Job #: 127

A3.1
Sheet



East Elevation

SCALE: 1/4" = 1'-0"

MATERIAL SCHEDULE				
TAG	MATERIAL	COLOR/FINISH	MANUFACTURER	REMARKS
ML-1	VERTICAL CEDAR SIDING	EBONY STAIN		T.K.,STAIN
ML-2	CEMENTITIOUS PANELS	WHITE	JAMES HARDIE	2'X8'
ML-3	ALUMINUM	CLEAR ANODIZED	CUSTOM	MATCH WINDOWS
ML-4	PAINTED STEEL	BLACK	CUSTOM	
ML-5	TPO MEMBRANE ROOFING	WHITE/LIGHT GREY	T.B.D.	CLASS A

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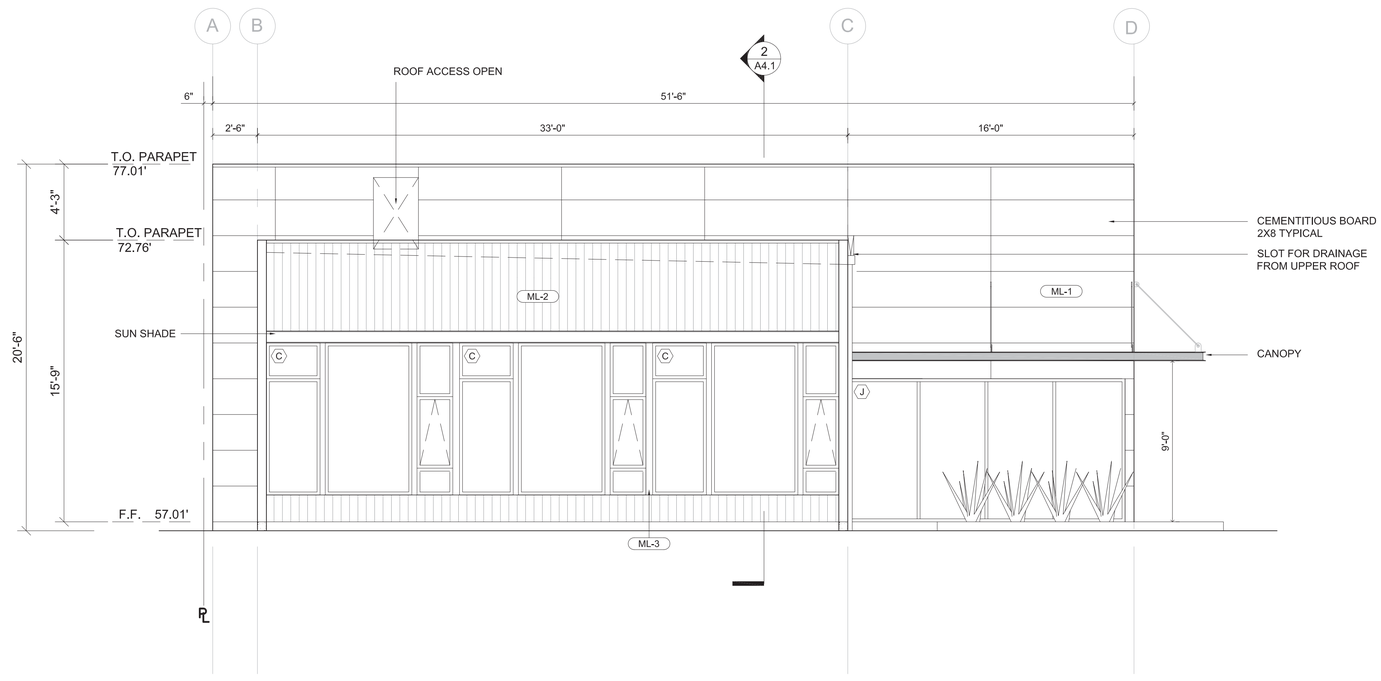
Elevation

Job #: 127

A3.2
Sheet



West Elevation

SCALE: 1/4" = 1'-0"

MATERIAL SCHEDULE				
TAG	MATERIAL	COLOR/FINISH	MANUFACTURER	REMARKS
ML-1	VERTICAL CEDAR SIDING	EBONY STAIN		T.K.,STAIN
ML-2	CEMENTITIOUS PANELS	WHITE	JAMES HARDIE	2'X8'
ML-3	ALUMINUM	CLEAR ANODIZED	CUSTOM	MATCH WINDOWS
ML-4	PAINTED STEEL	BLACK	CUSTOM	
ML-5	TPO MEMBRANE ROOFING	WHITE/LIGHT GREY	T.B.D.	CLASS A

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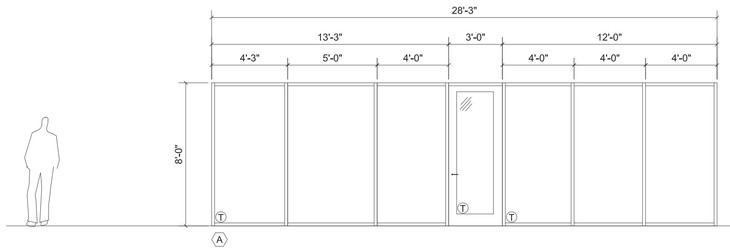
Elevation

Job #: 127

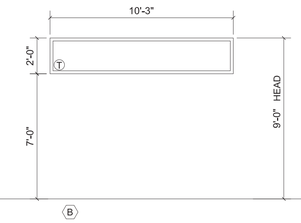
A3.3
Sheet

NOTE:

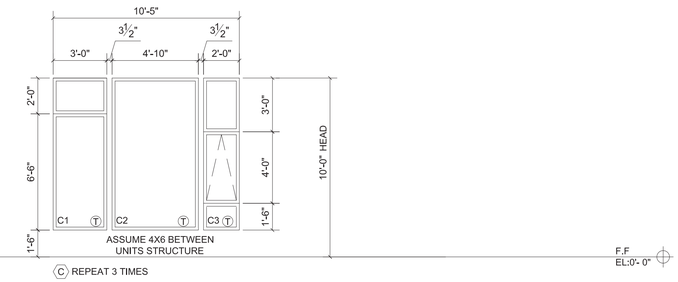
ALL SIZES NOTED IN WINDOW SCHEDULE DESIGNATE ROUGH OPENINGS.
ADJUST UNIT SIZE TO SUIT MANUFACTURER'S INSTALLATION REQUIREMENTS.



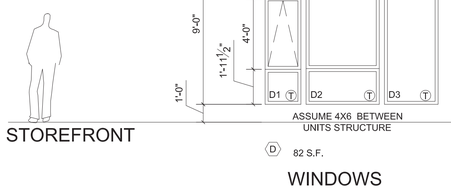
STOREFRONT



WINDOWS

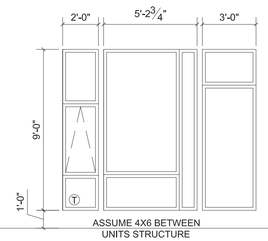


WINDOWS

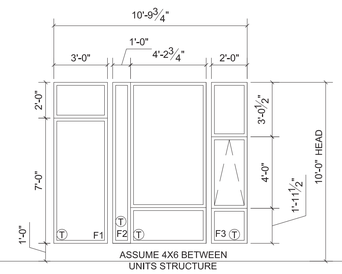


STOREFRONT

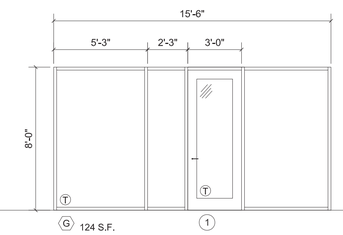
WINDOWS



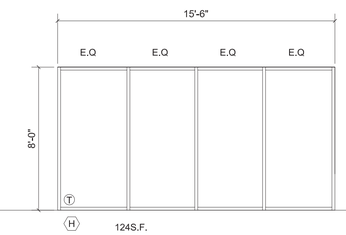
WINDOWS



WINDOWS



STOREFRONT



STOREFRONT

GLAZING SCHEDULE (T)= TEMPERED

TAG	QUANTITY	W	H	WINDOW MTL/FIN	U-FACTOR	SHGC	MANUFACTURER	FUNCTION	REMARKS
A	1	28'-3"	8'-0"	ALUM/ANOD	0.38 MAX	0.35 MAX	KAWNEER	FIXED/DR	STOREFRONT
B	1	10'-3"	2'-0"	ALUM/ANOD	0.30 MAX	0.35 MAX	MILGARD	FIXED	NAIL-FIN
C	3	10'-3"	8'-6"	ALUM/ANOD	0.30 MAX	0.35 MAX	MILGARD	AWN/FIXED	NAIL-FIN
D	1	9'-8"	9'-0"	ALUM/ANOD	0.30 MAX	0.35 MAX	MILGARD	AWN/FIXED	NAIL-FIN
E	1	10'-9-3/4"	9'-0"	ALUM/ANOD	0.30 MAX	0.35 MAX	MILGARD	AWN/FIXED	NAIL-FIN
F	1	10'-9-3/4"	9'-0"	ALUM/ANOD	0.30 MAX	0.35 MAX	MILGARD	AWN/FIXED	NAIL-FIN
G	1	10'-8"	8'-0"	ALUM/ANOD	0.38 MAX	0.35 MAX	MILGARD	FIXED/DR	STOREFRONT
H	1	15'-6"	8'-0"	ALUM/ANOD	0.38 MAX	0.35 MAX	KAWNEER	FIXED	STOREFRONT

EXTERIOR DOOR SCHEDULE (T)= TEMPERED

TAG	QUANTITY	W	H	DOOR MTL/FIN	FRAME MTL/FIN	HARDWARE	NOTES
1	2	3'-0"	8'-0"	ALUM/ANOD	ALUM/ANOD	1	TEMPERED GLASS

INTERIOR DOOR SCHEDULE (T)= TEMPERED

TAG	QUANTITY	W	H	DOOR MTL/FIN	FRAME MTL/FIN	HARDWARE	NOTES
2	8	3'-0"	7'-0"	SOLID-CORE/PAINT	PREHUNG/PAINT	2	
3	1	3'-0"	7'-0"	SOLID-CORE/PAINT	PREHUNG/PAINT	3	

GENERAL NOTES:

1. ALL WINDOWS AND DOORS SHALL BE NFRC CERTIFIED AND SHALL BE LABELED WITH NFRC CERTIFIED U-FACTOR.
2. CONTRACTOR SHALL VERIFY WINDOW AND DOOR ROUGH OPENINGS
2. FENESTRATION PRODUCTS SHALL BE LABELED WITH U FACTOR,SHGC, VT, AIR LEAKAGE.
3.CONTRACTOR SHALL VERIFY WINDOW AND DOOR ROUGH OPENINGS ARE SQUARE, LEVEL AND PLUM BEFORE INSTALLING WINDOW/ DOOR UNITS.
3. FLASH WINDOW PER AAMA STANDARDS AND MANUFACTURER REQUIREMENTS.

HARDWARE GROUPS:

HW GROUP 1 (EXTERIOR)

4-1/2 BB HINGE BUTTS US32D 2PR
ADA COMMERCIAL LEVER STOREDOOR FNCTN US32D 1 EA
OVERHEAD CLOSER ORB 1 EA

HW GROUP 2 (INTERIOR)

4-1/2 BB HINGE BUTTS US32D 1-1/2PR
ADA COMMERCIAL LEVER PASSAGE FNCTN 1 EA
FLOOR STOP US32D

HW GROUP 3 (INTERIOR)

JOHNSON 100BP SLIDING POCKET DOOR SET
SUGATSUNE DSI-4251 HANDL/PULL SS 1 EA

DOOR HARDWARE NOTES:

H.1 SEE FLOOR PLAN FOR DOOR HAND.

H.2 TYPICAL DOOR HARDWARE FINISH TO BE BRUSHED STAINLESS STEEL UNLESS OTHERWISE NOTED. WHERE THIS FINISH IS NOT AVAILABLE FOR A PARTICULAR HARDWARE ITEM, PROVIDE COMPATIBLE FINISH TYPICAL, ALL OPENINGS.

H.3 DOOR LEVER SETS TO BE SCHLAGE, ND SERIES, CYLINDRICAL LOCKS, RHODES (RHO) PATTERN, OR EQUAL. SEE HARDWARE GROUPS FOR FUNCTION. MATCHING DEAD-BOLT CYLINDER WHERE APPLICABLE TYPICAL, ALL DOORS.

WINDOW & DOOR TYPES

SCALE: 1/8" = 1'-0"

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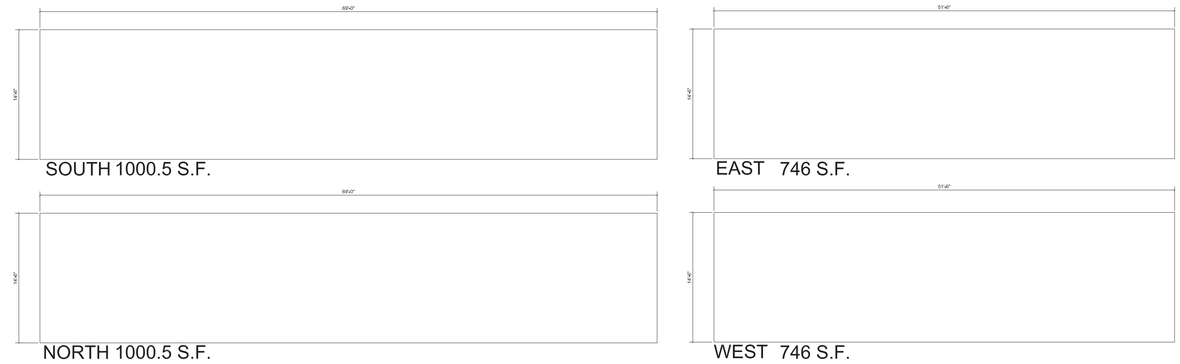
GLAZING SCHEDULE

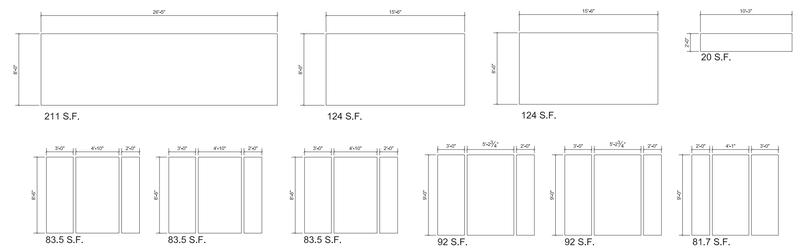
Job #: 127

A3.4
Sheet

WALL AREA



GLAZING AREA



Total Vertical Fenestration (rough opening)	divided by	Gross Exterior Above Grade Wall Area	times 100 equals	% Vertical Fenestration
993.0	÷	3494.5	X 100 =	28.4%

30% ALLOWED, COMPLIES

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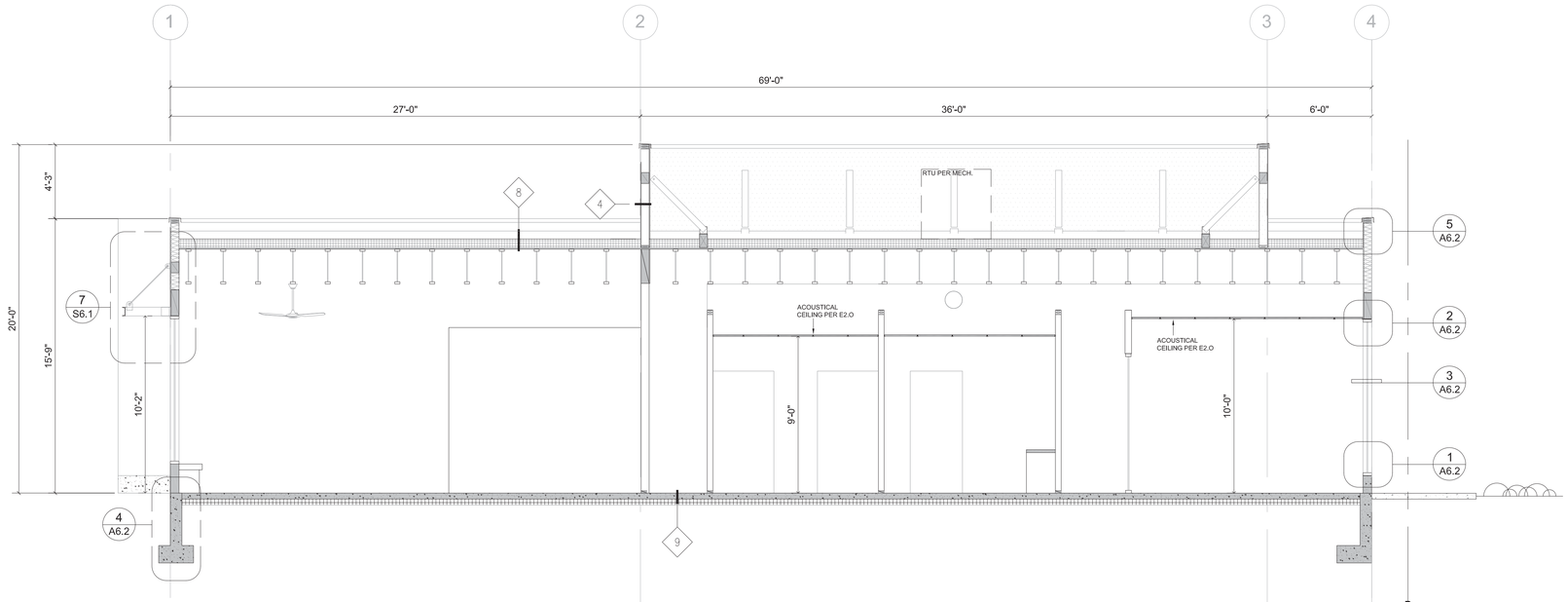
GLAZING AREA COMPLIANCE DIAGRAM

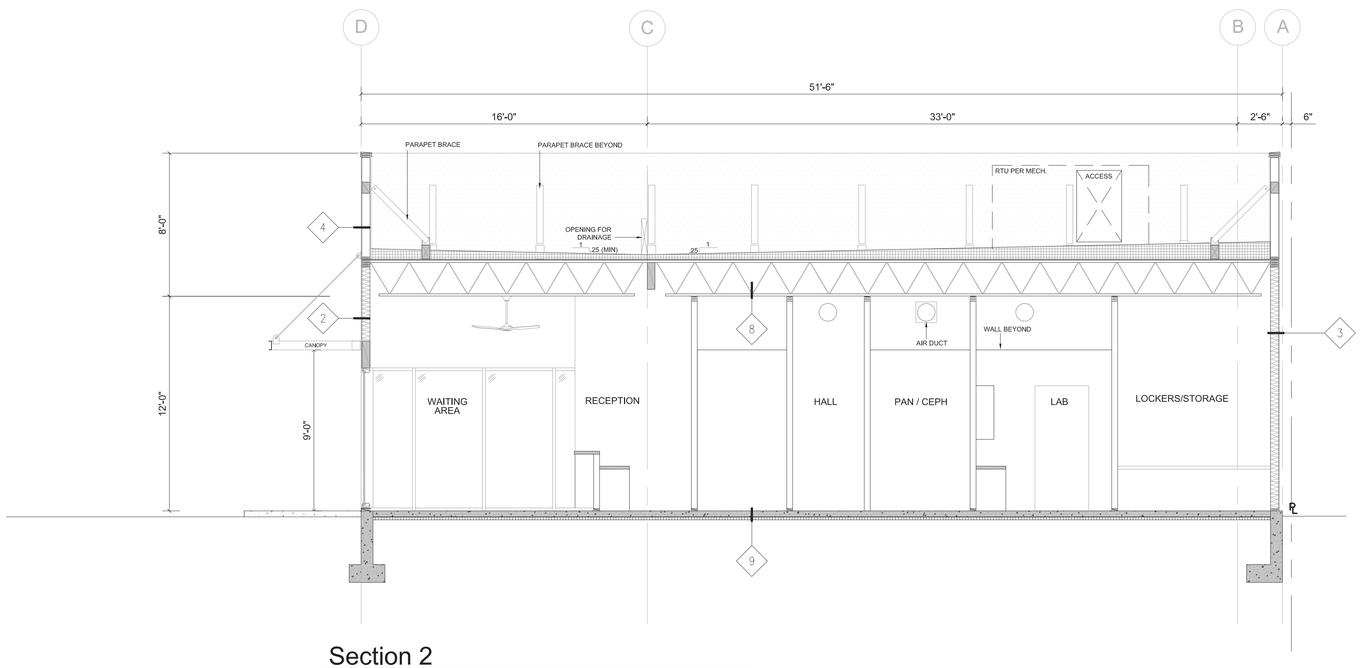
Job #: 127

A3.5
Sheet



Section 1

SCALE: 1/4" = 1'-0"



Section 2

SCALE: 1/4" = 1'-0"

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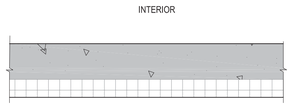
Sections

Job #: 127

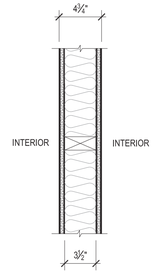
A4.0
Sheet



SYSTEM DESCRIPTION
- 4" SLAB, REINFORCE PER STRUCTURAL
- VAPOR BARRIER (6MIL MIN)
- 2" INSULATION (R10)
- COMPACTED BASE, PER STRUCTURAL

9 SLAB ON GRADE

SCALE: 1 ½" = 1'-0"

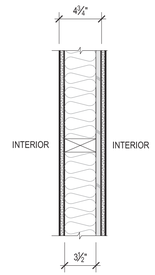


SYSTEM DESCRIPTION
- ⅝" GYP WALLBOARD
- 2X4 WOOD STUDS @ 16" O.C.
- ALTERNATE, 3" STEEL STUDS
- BATT INSULATION (SOUND)
- ⅝" GYP WALLBOARD

TYPE 5A
- ADD LEAD SHEET LINING AT INTERIOR

5 INTERIOR PARTITION

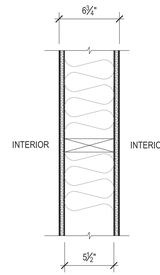
SCALE: 1 ½" = 1'-0"



SYSTEM DESCRIPTION
- ⅝" GYP WALLBOARD
- 2X4 WOOD STUDS @ 16" O.C.
- ALTERNATE, 3" STEEL STUDS
- BATT INSULATION (SOUND)
- 1/2" PLYWOOD
- ⅝" GYP WALLBOARD

6 INTERIOR PARTITION, SHEER WALL

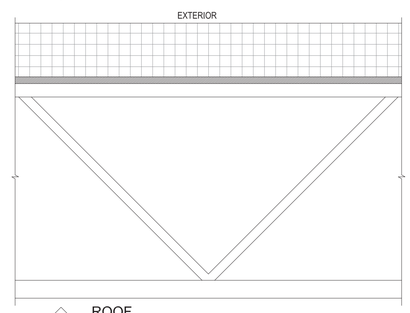
SCALE: 1 ½" = 1'-0"



SYSTEM DESCRIPTION
- ⅝" GYP WALLBOARD
- 2X4 WOOD STUDS @ 16" O.C.
- ALTERNATE, 3" STEEL STUDS
- BATT INSULATION (SOUND)
- ⅝" GYP WALLBOARD

7 INTERIOR PARTITION, PLUMBING

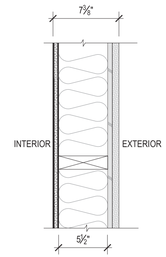
SCALE: 1 ½" = 1'-0"



SYSTEM DESCRIPTION
- TPO ROOF
- TAPERED RIGID INSULATION (6" MIN) R30
- T&G SHEATHING PER STRUCTURAL
- 24" D TRUSS PER STRUCTURAL
- EXPOSED INTERIOR

8 ROOF

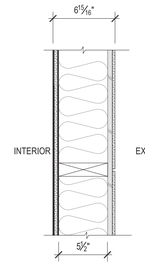
SCALE: 1 ½" = 1'-0"



SYSTEM DESCRIPTION
- 5/8" GYP WALLBOARD
- 2X6 WOOD STUDS @ 16" O.C.
- 5- ½" MINERAL HIGH DENSITY BATT INSULATION, R-21
- WALL SHEATHING PER STRUCTURAL (1/2" SHOWN)
- WEATHER BARRIER
- 1/4 T&G TK CEDAR SIDING, VERTICAL

1 EXTERIOR WALL - CEDAR CLAD

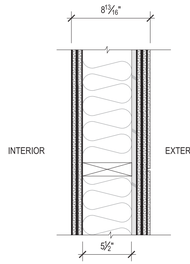
SCALE: 1 ½" = 1'-0"



SYSTEM DESCRIPTION
- 5/8" GYP WALLBOARD
- 2X6 WOOD STUDS @ 16" O.C.
- 5- ½" MINERAL HIGH DENSITY BATT INSULATION, R-21
- WALL SHEATHING PER STRUCTURAL (1/2" SHOWN)
- WEATHER BARRIER
- HARDI-PANEL, 2X8 HORIZONTAL (5/16)

2 EXTERIOR WALL - HARDI PANEL SIDING

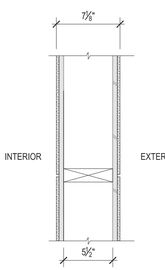
SCALE: 1 ½" = 1'-0"



SYSTEM DESCRIPTION
- 5/8" GYP WALLBOARD
- 2X6 WOOD STUDS @ 16" O.C.
- 5- ½" MINERAL HIGH DENSITY BATT INSULATION, R-21
- WALL SHEATHING PER STRUCTURAL (1/2" SHOWN)
- WEATHER BARRIER
- HARDI-PANEL, 2X8 HORIZONTAL (5/16)

3 EXTERIOR WALL - HARDI PANEL SIDING

SCALE: 1 ½" = 1'-0"



SYSTEM DESCRIPTION
- HARDI-PANEL, PAINT (5/16)
- WEATHER BARRIER
- 1/2" PLYWOOD
- 2X6 WOOD STUDS @ 16" O.C.
- WALL SHEATHING PER STRUCTURAL (1/2" SHOWN)
- WEATHER BARRIER
- HARDI-PANEL, 2X8 HORIZONTAL (5/16)

4 PARAPET - HARDI PANEL SIDING

SCALE: 1 ½" = 1'-0"

CHRIS PARDO DESIGN
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Stated drawing scale is based on 34x22 sheet.

4430
REGISTERED ARCHITECT
PETER DAVID GEAVES
STATE OF WASHINGTON

OFFICE BUILDING FOR DUDLEY SMILES

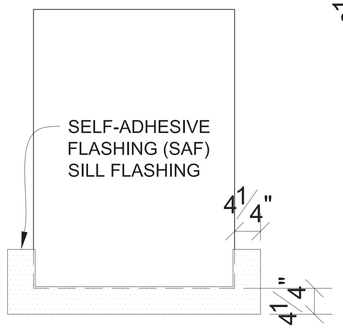
5655 221ST PLACE SE
ISSAQUAH WA 98027

No.	Date	Issue
1	06.01.16	Permit

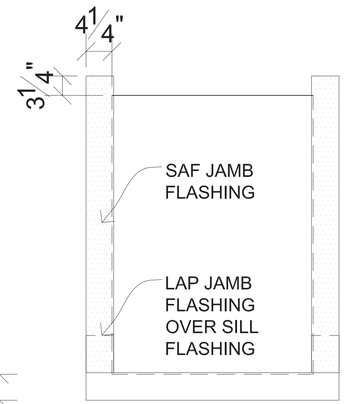
Assembly Types

Job #: 127

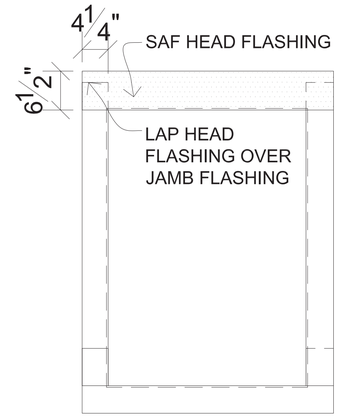
A6.0
Sheet



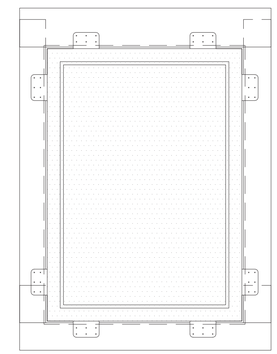
STEP 1 - SILL



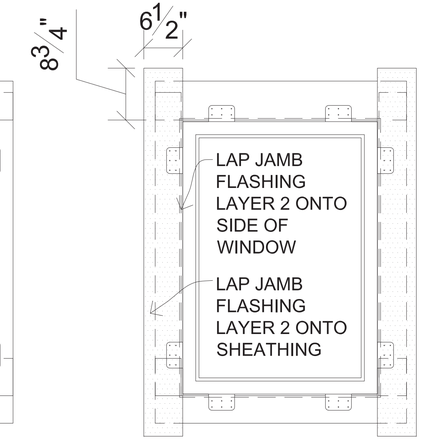
STEP 2 - JAMB



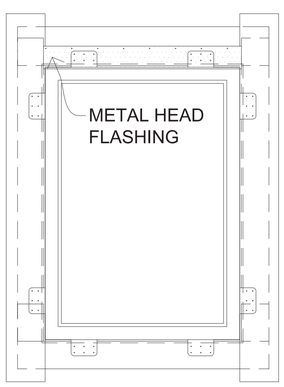
STEP 3 - HEAD



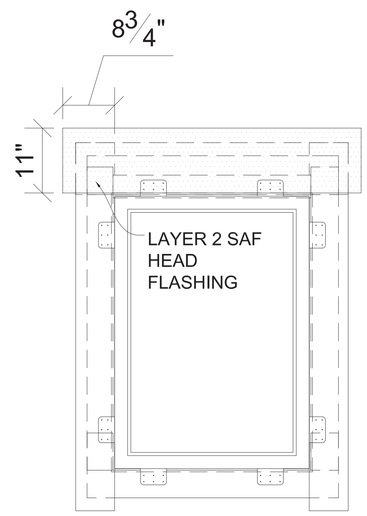
STEP 4 - WINDOW



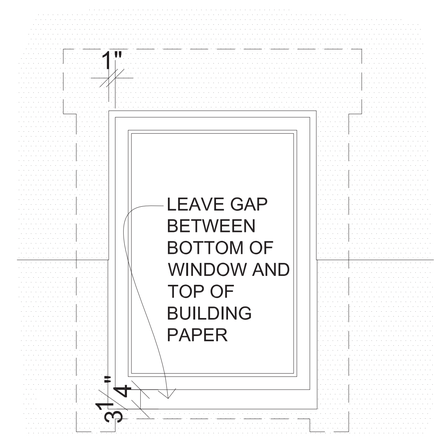
STEP 5 - JAMB LAYER 2



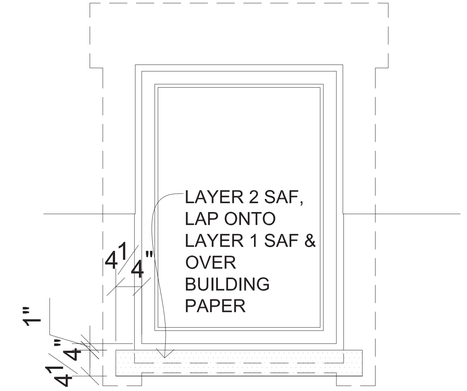
STEP 6 - METAL HEAD FLASHING



STEP 7 - SAF HEAD FLASHING 2



STEP 8 - BUILDING PAPER



STEP 9 - SILL FLASHING 2

1 A6.0 FLASHING INSTALLATION

SCALE: N.T.S.

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4430 REGISTERED ARCHITECT PETER DAVID GREAVES STATE OF WASHINGTON

OFFICE BUILDING FOR DUDLEY SMILES

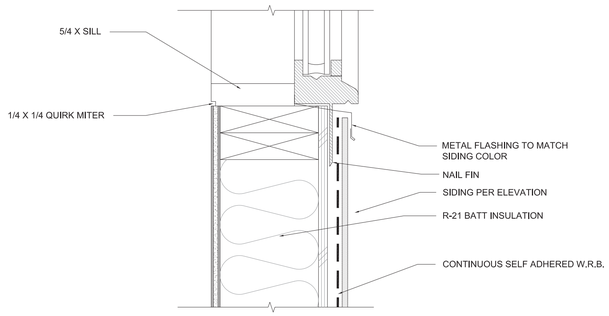
5655 221ST PLACE SE
ISSAQUAH WA
98027

No.	Date	Issue
1	06.01.16	Permit

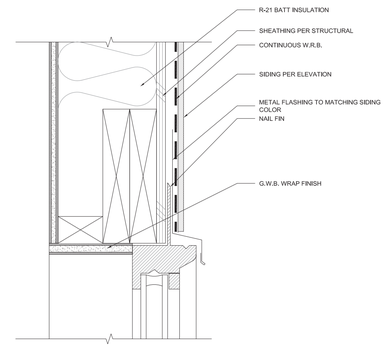
WINDOW WRAP

Job #: 127

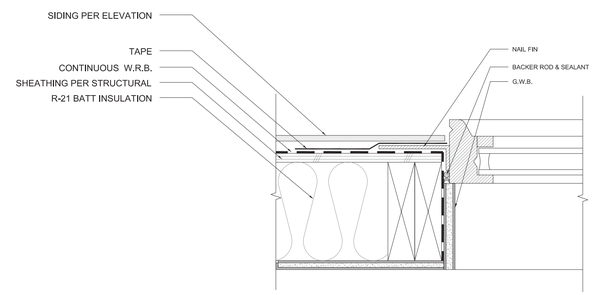
A6.1
Sheet



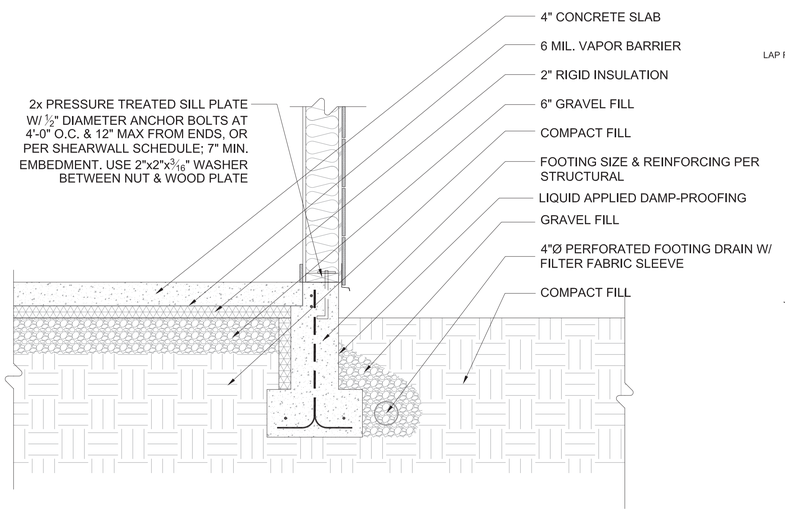
1 Typ. Window Sill Detail
SCALE: 3" = 1'-0"



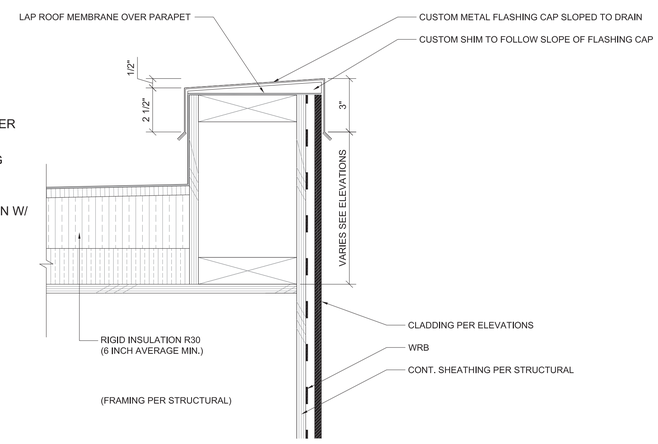
2 Typ. Window Header Detail
SCALE: 3" = 1'-0"



3 Typ. Window Jamb Detail
SCALE: 3" = 1'-0"



4 Typical Footing Detail
SCALE: 1/2" = 1'-0"



5 Parapet
SCALE: 3" = 1'-0"

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ELEMENTAL ARCHITECTURE

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STATE OF WASHINGTON

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ISSAQUAH WA
98027

No.	Date	Issue
1	06.01.16	Permit

DETAILS

Job #: 127

A6.2
Sheet

STRUCTURAL - GENERAL NOTES

GENERAL REQUIREMENTS

GOVERNING CODE: The design and construction of this project is governed by the "International Building Code (IBC)", 2012 Edition, hereafter referred to as the IBC, as adopted and modified by the City of Issaquah, WA understood to be the Authority Having Jurisdiction (AHJ).
REFERENCE STANDARDS: Refer to Chapter 35 of 2012 IBC. Where other Standards are noted in the drawings, use the latest edition of the standard unless a specific date is indicated. Reference to a specific section in a code does not relieve the contractor from compliance with the entire standard.

DEFINITIONS: The following definitions cover the meanings of certain terms used in these notes:

"**Architect/Engineer**" – The Architect of Record and the Structural Engineer of Record.

- "**Structural Engineer of Record" (SER)** – The structural engineer who is licensed to stamp & sign the structural documents for the project. The SER is responsible for the design of the Primary Structural System.
- "**Submit for review**" - Submit to the Architect/Engineer for review prior to fabrication or construction.
- "**Per Plan**" – Indicates references to the structural plans, elevations and structural general notes.
- **"Specialty Structural Engineer" (SSE)** – A professional engineer (PE or SE), licensed in the State where the project is located, (typically not the SER), who performs specialty structural engineering services for selected specialty-engineered elements identified in the Contract Documents, and who has experience and training in the Specialty. Documents stamped and signed by the SSE shall be completed by or under the direct supervision of the SSE.
- **"Bidder-designed"** – Components of the structure that require the general contractor, subcontractor, or supplier who is responsible for the design, fabrication and installation of specialty-engineered elements identified in the Contract Documents to retain the services of an SSE. Submittals of "Bidder-designed" elements shall be stamped and signed by the SSE.

SPECIFICATIONS: Refer to the project specifications issued as part of the contract documents for information supplemental to these drawings.

OTHER DRAWINGS: Refer to the architectural, mechanical, electrical, civil and plumbing drawings for additional information including but not limited to: dimensions, elevations, slopes, door and window openings, non-bearing walls, stairs, finishes, drains, waterproofing, railings, mechanical unit locations, and other nonstructural items.

STRUCTURAL DETAILS: The structural drawings are intended to show the general character and extent of the project and are not intended to show all details of the work. Use entire detail sheets and specific details referenced in the plans as "typical" wherever they apply. Similarly, use details on entire sheets with "typical" in the name wherever they apply.

STRUCTURAL RESPONSIBILITIES: The structural engineer (SER) is responsible for the strength and stability of the primary structure in its completed form.

COORDINATION: The Contractor is responsible for coordinating details and accuracy of the work; for confirming and correlating all quantities and dimensions; for selecting fabrication processes; for techniques of assembly; and for performing work in a safe and secure manner.

MEANS, METHODS and SAFETY REQUIREMENTS: The contractor is responsible for the means and methods of construction and all job related safety standards such as OSHA and DOSH (Department of Occupational Safety and Health)..

BRACING/SHORING DESIGN ENGINEER: The contractor shall at his discretion employ an SSE, a registered professional engineer for the design of any temporary bracing and shoring.

TEMPORARY SHORING, BRACING: The contractor is responsible for the strength and stability of the structure during construction and shall provide temporary shoring, bracing and other elements required to maintain stability until the structure is complete. It is the contractor's responsibility to be familiar with the work required in the construction documents and the requirements for executing it properly.

CONSTRUCTION LOADS: Loads on the structure during construction shall not exceed the design loads as noted in DESIGN CRITERIA & LOADS below or the capacity of partially completed construction as determined by the Contractor's SSE for Bracing/Shoring.

CHANGES IN LOADING: The contractor has the responsibility to notify the SER of any architectural, mechanical, electrical, or plumbing load imposed onto the structure that differs from, or that is not documented on the original Contract Documents (architectural / structural / mechanical / electrical or plumbing drawings). Provide documentation of location, load, size and anchorage of all undocumented loads in excess of **400** pounds. Provide marked-up structural plan indicating locations of any new equipment or loads. Submit plans to the Architect/Engineer for review prior to installation.

NOTE PRIORITIES: Plan and detail notes and specific loading data provided on individual plans and detail drawings supplements information in the Structural General Notes.

DISCREPANCIES: In case of discrepancies between the General Notes, Specifications, Plans/Details or Reference Standards, the Architect/Engineer shall determine which shall govern. Discrepancies shall be brought to the attention of the Architect/Engineer before proceeding with the work. Should any discrepancy be found in the Contract Documents, the Contractor will be deemed to have included in the price the most expensive way of completing the work, unless prior to the submission of the price, the Contractor asks for a decision from the Architect as to which shall govern. Accordingly, any conflict in or between the Contract Documents shall not be a basis for adjustment in the Contract Price.

SITE VERIFICATION: The contractor shall verify all dimensions and conditions at the site. Conflicts between the drawings and actual site conditions shall be brought to the attention of the Architect/Engineer before proceeding with the work.

ADJACENT UTILITIES: The contractor shall determine the location of all adjacent underground utilities prior to earthwork, foundations, shoring, and excavation. Any utility information shown on the drawings and details is approximate and not necessarily complete.

ALTERNATES: Alternate products of similar strength, nature and form for specified items may be submitted with adequate technical documentation (proper test report, etc.) to the Architect/Engineer for review. Alternate materials that are submitted without adequate technical documentation or that significantly deviate from the design intent of materials specified may be returned without review. Alternates that require substantial effort to review will not be reviewed unless authorized by the Owner.

DESIGN CRITERIA AND LOADS

OCCUPANCY:	Occupancy Category of Building per 2012 IBC Table 1604.5 =	II

WIND DESIGN:	MAIN WIND FORCE RESISTING SYSTEM	
	Basic Wind Speed MPH	110
	Exposure Category	B
	Wind Importance I_w =	1.0
	Internal Pressure Coefficient Cpi =	+/- 0.18
	Topographic Factor Kzt =	1.0
	Wind Analysis procedure used:	Method: Enclosed Simple Diaphragm Low-Rise Buildings
	Uplift Load Net	5

SEISMIC DESIGN:	Seismic Design Category: SDC =	D
	Basic Structural System	Bearing Wall
	Seismic Force Resisting System	Shear Walls
	Response Modification Factor: R =	6.5
	System Over strength Factor Omega =	3
	Deflection Amplification Factor Cd =	4
	Site Classification per IBC 1613.3.2 & ASCE 7-10, Ch. 20 Site Class =	D
	Seismic Importance Factor per ASCE 7-10 Table 1.5-2 Ie =	1.0
	Spectral Design Response Coefficient (Short Period) SDS =	0.879 g
	Seismic Analysis procedure used:	Equivalent Lateral Force (ELF)

SNOW LOAD: (1)	Flat Roof Snow Load, (PSF) p_f =	25
	Snow Drift Loading required by Authority Having Jurisdiction?	No
	Snow Load Importance Factor I_s =	1.0 (2)

1) Snow Load is un-reducible and includes 5 psf rain-on-snow surcharge where ground snow load is greater than zero and 20 psf or less per ASCE 7-10 Section 7.10.
2) Snow Load Importance Factor per ASCE 7-10 Table 1.5-2.

DESIGN LIVE LOADS	AREA	LIVE LOADS (PSF) UNO	REMARKS & FOOTNOTES
	Handrails & Pedestrian Guardrails	50 PLF or 200 LB	(1)
	Residential	40	
	Balconies & Decks	----	Same as Occupancy served

(1) Top rail shall be designed to resist 50 PLF line load or 200 lb point load applied in any direction at any point. Intermediate rails (all those except the handrail), balusters and panel fillers shall be designed to withstand a horizontally applied normal load of 50 LB on an area not to exceed 1 ft square. These three loads are to be considered separately with worst case used for design.

DESIGN DEAD LOADS	BIDDER DESIGN	DEAD LOADS (PSF) UNO	REMARKS & FOOTNOTES
	Dead Load, Total Top Chord Bottom Chord	21 PSF 15 PSF 6 PSF	For Pre-Fabricated Wood Open-Web Truss design

SUBMITTALS

SUBMIT FOR REVIEW: SUBMITTALS of shop drawings, and product data are required for items noted in the individual materials sections and for *bidder designed* elements.

SUBMITTAL REVIEW PERIOD: Submittals shall be made in time to provide a minimum of TWO WEEKS or 10 WORKING DAYS for review by the Architect/Engineer prior to the onset of fabrication.

GENERAL CONTRACTOR'S PRIOR REVIEW: Prior to submission to the Architect/Engineer, the Contractor shall review the submittal for completeness. Dimensions and quantities are not reviewed by the SER, and therefore, must be verified by the General Contractor. Contractor shall provide any necessary dimensional details requested by the Detailer and provide the Contractor's review stamp and signature before forwarding to the Architect/Engineer.

SHOP DRAWING REVIEW: Once the contractor has completed his review, the SER will review the submittal for general conformance with the design concept and the contract documents of the building and will stamp the submittal accordingly. Markings or comments shall not be construed as relieving the contractor from compliance with the project plans and specifications, nor departures there from. The SER will return submittals in the form they are submitted in (either hard copy or electronic). For hard copy submittals, the contractor is responsible for submitting the required number of copies to the SER for review.

SHOP DRAWING DEVIATIONS: When shop drawings (component design drawings) differ from or add to the requirements of the structural drawings they shall be designed and stamped by the responsible SSE.

DEFERRED SUBMITTALS

BIDDER-DESIGNED ELEMENTS
Submit "Bidder-Designed" deferred submittals to the Architect and SER for review. The deferred submittals shall also be submitted to the city for approval, if required by the city.

Design of prefabricated, "bidder designed", manufactured, pre-engineered, or other fabricated products shall be comply with the following requirements:

1) Design considers tributary dead, live, wind and earthquake loads in combinations required by IBC.
2) Design within the Deflection Limits noted herein and as specified or referenced in the IBC.
3) Design shall conform to the specifications and reference standards of the governing code.
4) Submittal shall include:
   a. Calculations prepared, stamped and signed by the SSE demonstrating code conformance.
   b. Engineered component design drawings are prepared, stamped and signed by the SSE.
   c. Product data, technical information and manufacturer's written requirements and Agency approvals as applicable.
   d. SSE may submit to the Architect/Engineer, a request to utilize relevant alternate design criteria of similar nature and generally equivalency which is recognized by the Code and acceptable to the Authority Having Jurisdiction. Submit adequate documentation of design.

DEFLECTION LIMITS:	VERTICAL	LIMIT
	Roof Members, Dead + Live or Snow or Wind, Total Load (TL) Deflection	L / 240, where (L is span length,inches)
	Roof, Live or Snow or Wind Load (RLL)	L / 360
	Floor Members, Total Load (TL) uno	L / 360
	Floor Live Load (LL) uno	L / 480

GENERAL CONTRACTOR'S PRIOR REVIEW: Once the contractor has completed his review of the SSE component drawings, the SER will review the submittal for general conformance with the design of the building and will stamp the submittal accordingly. Review of the Specialty Structural Engineer's (SSE) shop drawings (component design drawings) is for compliance with design criteria and compatibility with the design of the primary structure and does not relieve the SSE of responsibility for that design. All necessary bracing, ties, anchorage, proprietary products shall be furnished and installed per manufacturer's instructions or the SSE's design drawings and calculations. These elements include but are not limited to:

- Prefabricated Wood Trusses
- Steel Stairs
- Handrails, Guardrails and Balcony Rail Anchorages

INSPECTIONS, QUALITY ASSURANCE VERIFICATIONS AND TEST REQUIREMENTS

INSPECTIONS: Foundations, footings, under slab systems and framing are subject to inspection by the Building Official in accordance with IBC 110.3. Contractor shall coordinate all required inspections with the Building Official.

SPECIAL INSPECTIONS, VERIFICATIONS and TESTS: Special Inspections, Verifications and Testing shall be done in accordance with IBC Chapter 17 and the STATEMENT OF SPECIAL INSPECTIONS herein per IBC Sections 1704 and 1705, including 1705.11 for seismic resistance for projects in Seismic Design Categories C, D, E and F as applicable.

SPECIAL INSPECTION AGENCY and SPECIAL INSPECTORS: Owner shall retain a WABO accredited Special Inspections agency to provide Special Inspections for the project. Special Inspectors shall be qualified persons per IBC 1704.2.1.

STATEMENT OF SPECIAL INSPECTIONS per 1704 and 1705. Special Inspections and Testing are required by 1704, 1706, 1707 and 1708 for the following:

FABRICATION SHOP INSPECTION: Where off-site Fabrication of gravity LOAD BEARING MEMBERS & ASSEMBLIES is performed, Special Inspector shall verify that the fabricator complies with IBC 1704.2.5

SOILS & FOUNDATION CONSTRUCTION per SBC Section 1705.6

- **Periodic** inspection of soils earthwork per Table 1705.6 is required for:
  - Footing soil bearing surfaces prior to placing any reinforcing steel
  - Excavation depth and bearing layer prior to placing any reinforcing steel.
  - Compacted fill material classification.
  - Subgrade preparation prior to filling.
- **Continuous** inspection per Table(s) 1705.6 required for:
  - Filling operations to satisfy requirements of IBC Table 1705.6 and the geotechnical report listed under SOILS & FOUNDATIONS section.
  - Compacted fill density testing of each lift, proper lift thickness and material classification.

CONCRETE CONSTRUCTION per IBC Section 1705.3 and Table 1705.3 including:

- **Periodic** inspection required for:
  - Size & placement of all reinforcing steel prior to the pour.
  - Placing & size of cast-in-place bolts and embedded fabrications prior to the pour.
  - Shape, location & dimensions of members formed.
- **Continuous** inspection required during the:
  - Placing of reinforced concrete for proper application techniques.
  - Placing of concrete around cast-in-place bolts and embeds.

STRUCTURAL STEEL per IBC Section 1704.2.5.1

A qualified Special Inspector of an "approved agency" providing Quality Assurance (QA) Special Inspections for the project shall review and confirm the Fabricator and Erector's Quality Control (QC) procedures for completeness and adequacy relative to AISC 360-10 Chapter N, the AISC 303 Code of Standard Practice, AWS D1.1-2010 Structural Welding Code and 2012 IBC code requirements for the fabricator's scope of work.

- QA Agency providing Special Inspections shall provide personnel meeting the minimum qualification requirements for Inspection and Nondestructive Testing NDT per AISC 360-10 Section N4.
- Verify Fabricator and Erector Quality Control Program per AISC 360-10 Section N2.
- Visual Welding Inspection of welds by both QC and QA personnel shall be per tables listed in AISC 360 Section N5.
- Inspection Tasks for Welding
  - Prior to Welding per AISC 360-10 Table N5.4-1
  - During Welding per AISC 360-10 Table N5.4-2
  - After Welding per AISC 360-10 Table N5.4-3
- Inspection Tasks for Bolting per AISC 360-10 Section N5.6
  - After Bolting per AISC 360-10 Table N5.6-3

WOOD CONSTRUCTION per IBC Section 1705.5, 1705.10.1, & 1705.11.2:

- **Periodic** inspection required for verification of:
  - Shear Walls: Anchor Bolts, Hold-downs (HD) and Continuous Rod Tie-Down Systems (TDS) including squash blocks, LPT shear connectors, strap connectors, boundary edge nailing, plate nailing and panel edge shear nailing for size & spacing where fastener spacing of the sheathing is 4 inches or less.
  - Diaphragms: blocking, strap connections, boundary edge and panel shear nailing size & spacing **where fastener spacing of the sheathing is 4 inches or less.**
  - Moisture content of wood studs, plates, beams and joists.
  - Proper bottom plates sizes (2x and 3x) and plate washers.
  - Roof truss 'hurricane' clips.

POST-INSTALLED ANCHORS TO CONCRETE AND MASONRY**:** shall comply with IBC Section 1703. Inspections shall be in accordance with the requirements set forth in the approved ICC Evaluation Report and as indicated by the design requirements specified on the drawings. Refer to the POST INSTALLED ANCHORS section of these notes for anchors that are the basis of the design. Special inspector shall verify anchors are as specified in the POST INSTALLED ANCHORS section of these notes or as otherwise specified on the drawings. Substitutions require approval by the SER and require substantiating calculations and current 2012 IBC recognized ICC Evaluation Services (ES) Report. Special Inspector shall document in their Special Inspection Report compliance with each of the elements required within the applicable ICC Evaluation Services (ES) Report.

INSPECTION SUBMITTALS: Special inspection reports shall be provided on a weekly basis. Final special inspection reports will be required by each special inspection firm per SBC 1704.2.4. Submit copies of all inspection reports to the Architect/Engineer and the Authority Having Jurisdiction for review.

CONTRACTOR RESPONSIBILITY: Prior to issuance of the building permit, the Contractor is required to provide the Authority Having Jurisdiction a signed, written acknowledgement of the Contractor's responsibilities associated with the above Statement of Special Inspections addressing the requirements listed in IBC Section 1704.4. Contractor is referred to IBC Sections 1705.11.5 and 1705.11.6 for architectural and MEP building systems that may be subject to additional inspections (based on the building's designated Seismic Design Category listed in the CRITERIA), including anchorage of HVAC ductwork containing hazardous materials, piping systems and mechanical units containing flammable, combustible or highly toxic materials, electrical equipment used for emergency or standby power, exterior wall panels and suspended ceiling systems.

PREFABRICATED CONSTRUCTION: All prefabricated construction shall conform to IBC Section 1703.

SOILS AND FOUNDATIONS

REFERENCE STANDARDS: Conform to IBC Chapter 18 "Soils and Foundations."

GEOTECHNICAL REPORT: Recommendations contained in the Geotechnical Engineering Study, number 16-048 by PanGeo Inc., dated April 14, 2016, were used for design.

CONTRACTOR'S RESPONSIBILITIES: Contractor shall be responsible to review the Geotechnical Report and shall follow the recommendations specified therein including, but not limited to, subgrade preparations, pile installation procedures, ground water management and steep slope Best Management Practices."

GEOTECHNICAL SUBGRADE INSPECTION:
The Geotechnical Engineer shall inspect all sub-grades and prepared soil bearing surfaces, prior to placement of foundation reinforcing steel and concrete. Geotechnical Engineers shall provide a letter to the owner stating that soils are adequate to support the "Allowable Foundation Bearing Pressure(s)" shown below.

DESIGN SOIL VALUES:
Safety Factor per Soils Report 1.5
Allowable Foundation Bearing Pressure .... 2000 PSF
Passive Lateral Pressure .... 300 PSF/FT
Coefficient of Sliding Friction 0.5

FOUNDATIONS and FOOTINGS: Foundations shall bear on either on competent native soil or compacted structural fill as per the geotechnical report. Exterior perimeter footings shall bear not less than **18** inches below finish grade, unless otherwise specified by the geotechnical engineer and/or the building official.

FOOTING DEPTH: Tops of footings shall be as shown on plans with vertical changes as indicated with steps in the footings; locations of steps shown as approximate and shall be coordinated with the civil grading plans to ensure that the exterior perimeter footings bear no less than 18 inches below finish grade, or as otherwise indicated by the geotechnical engineer or building official.

SLABS-ON-GRADE: All slabs-on-grade shall bear on compacted structural fill or competent native soil per the geotechnical report. All moisture sensitive slabs-on-grade or those subject to receive moisture sensitive coatings/covering shall be provided with an appropriate capillary break and vapor barrier/retardant over the subgrade prepared and installed as noted in the geotechnical report, barrier manufacturer's written recommendations and coordinated with the finishes specified by the Architect.

CAST-IN-PLACE CONCRETE

REFERENCE STANDARDS: Conform to:
(1) ACI 301-10 "Specifications for Structural Concrete"
(2) IBC Chapter 19 "Concrete"
(3) ACI 318-11/318R-11 "Building Code Requirements for Structural Concrete"
(4) ACI 117-10 "Specifications for Tolerances for Concrete Construction and Materials"
(5) ACI 332-10 "Residential Code Requirements For Structural Concrete"

FIELD REFERENCE: The contractor shall keep a copy of ACI Field Reference manual, SP-15, "Standard Specifications for Structural Concrete (ACI 301) with Selected ACI and ASTM References."

CONCRETE MIXTURES: Conform to ACI 301 Section 4 "Concrete Mixtures" and IBC Section 1904.3.

MATERIALS: Conform to ACI 301 Section 4.2.1 "Materials" for requirements for cementitious materials, aggregates, mixing water and admixtures.

SUBMITTALS: Provide all submittals required by ACI 301 Section 4.1.2. Submit mix designs for each mix in the table below. Substantiating strength results from past tests shall not be older than 24 months per ACI 318 Section 5.3.

TABLE OF MIX DESIGN REQUIREMENTS

Member Type/Location	Strength f'c (psi)	Test Age (days)	Maximum Aggregate	Exposure Class	Max W/C Ratio	Air Content	Notes
Foundations (Residential)	3000	28	1"	-	-	-	1 to 7 Typical UNO

Table of Mix Design Requirements Notes:

(1) W/C Ratio: Water–cementitious material ratios shall be based on the total weight of cementitious materials. Maximum ratios are controlled by strength noted in the Table of Mix Design Requirements and durability requirements given in ACI 318 Section 4.3.

(2) Cementitious Materials:
  a. The use of fly ash, other pozzolans, silica fume, or slag shall conform to ACI 318 Sections 4.3.1 and 4.4.2. Maximum amount of fly ash shall be 25% of total cementitious content unless reviewed and approved otherwise by SER.
  b. For concrete used in elevated floors, minimum cementitious-materials content shall conform to ACI 301 Table 4.2.2.1. Acceptance of lower cement content is contingent on providing supporting data to the SER for review and acceptance.
  c. Cementitious materials shall conform to the relevant ASTM standards listed in ACI 318 Section 3.2.1.

(3) Air Content: Conform to ACI 318 Section 4.4.1. Minimum standards for exposure class are noted in the table. If freezing and thawing class is not noted, air content given is that required by the SER. Concrete surfaces in contact with the soil require entrained air. Tolerance is ±1-½%. Air content shall be measured at point of placement.

(4) Aggregates shall conform to ASTM C33.

(5) Slump: Conform to ACI 301 Section 4.2.2.2. Slump shall be determined at point of placement.

(6) Chloride Content: Conform to ACI 318 Section 4.3.1.

(7) Non- chloride accelerator: Non-chloride accelerating admixture may be used in concrete placed at ambient temperatures below 50°F at the contractor's option.

MEASURING, MIXING, AND DELIVERY: Conform to ACI 301 Section 4.3.

HANDLING, PLACING, CONSTRUCTING AND CURING: Conform to ACI 301 Section 5. In addition, hot weather concreting shall conform to ACI 305.1-06 and cold weather concreting shall conform to ACI 306.1-90.

EMBEDDED ITEMS: Position and secure in place expansion joint material, anchors and other structural and non-structural embedded items before placing concrete. Contractor shall refer to mechanical, electrical, plumbing and architectural drawings and coordinate other embedded items.

POST-INSTALLED ANCHORS to CONCRETE: Anchor location, type, diameter and embedment shall be as indicated on drawings. Reference the POST INSTALLED ANCHORS section for applicable Post-Installed Anchor Adhesives. Anchors shall be installed and inspected in strict accordance with the applicable ICC-Evaluation Service Report (ESR). Special inspection shall be per the TESTS and INSPECTIONS section.

FOR PERMIT

These drawings are sufficiently complete for submission to the jurisdiction having authority for permit. The Contractor shall not use these drawings for construction until Contractor receives written approval for use in construction by the jurisdiction having authority and DCI Engineers.

CHRIS PARDO DESIGN
ELEMENTAL ARCHITECTURE

121 Prefontaine Pl S
Seattle WA 98104
p 206.351.6535

elementalarchitecture.com

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These drawings were prepared for **"Dudley Smiles"** a project in Issaquah, WA. They are not intended for use on any other project.

Stated drawing scale is based on 34x22 sheet.

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OFFICE BUILDING FOR DUDLEY SMILES

5655 221ST PLACE SE
ISSAQUAH WA 98027

No.	Date	Issue
	05.31.16	PERMIT SET

BRUCE YANG ZHONG
STATE OF WASHINGTON
34493
STRUCTURAL ENGINEER
PROFESSIONAL ENGINEER

DCI Job #:16011-0074

STRUCTURAL GENERAL NOTES

SI.1
Sheet

CONCRETE REINFORCEMENT

REFERENCE STANDARDS: Conform to:
(1) ACI 301-10 "Standard Specifications for Structural Concrete", Section 3 "Reinforcement and Reinforcement Supports."
(2) ACI SP-66-04 "ACI Detailing Manual" including ACI 315-99 "Details and Detailing of Concrete Reinforcement."
(3) CRSI MSP-09, 28th Edition, "Manual of Standard Practice."
(4) ANSI/AWS D1.4 "Structural Welding Code - Reinforcing Steel."
(5) IBC Chapter 19-Concrete.
(6) ACI 318-11 "Building Code Requirements for Structural Concrete."
(7) ACI 117-10 "Specifications for Tolerances for Concrete Construction and Materials"
(8) ACI 332-10 "Residential Code Requirements for Structural Concrete".

SUBMITTALS: Conform to ACI 301 Section 3.1.1 "Submittals, data and drawings." Submit placing drawings showing fabrication dimensions and locations for placement of reinforcement and reinforcement supports.

MATERIALS:
Reinforcing Bars .... ASTM A615, Grade 60, deformed bars.
Bar Supports .... CRSI MSP-09, Chapter 3 "Bar Supports."
Tie Wire .... 16 gage or heavier, black annealed.
Stud Rails .... ASTM A1044

FABRICATION: Conform to ACI 301, Section 3.2.2. "Fabrication", and ACI SP-66 "ACI Detailing Manual."

WELDING: Bars shall not be welded unless authorized. When authorized, conform to ACI 301, Section 3.2.2.2. "Welding", AWS D1.4, and provide ASTM A706, grade 60 reinforcement.

PLACING: Conform to ACI 301, Section 3.3.2 "Placement." Placing tolerances shall conform to ACI 117.

CONCRETE COVER: Conform to the following cover requirements unless noted otherwise in the drawings.
Concrete cast against earth .... 3"
Concrete exposed to earth or weather .... 2"

SPLICES: Conform to ACI 301, Section 3.3.2.7, "Splices". Refer to "Typical Lap Splice and Development Length Schedule" for typical reinforcement splices. Splices indicated on individual sheets shall control over the schedule. Mechanical connections may be used when approved by the SER.

FIELD BENDING: Conform to ACI 301 Section 3.3.2.8. "Field Bending or Straightening." Bar sizes #3 through #5 may be field bent cold the first time. Other bars require preheating. Do not twist bars. Bars shall not be bent past 45 degrees.

TYPICAL CONCRETE REINFORCEMENT: Unless noted on the plans, concrete walls shall have the following minimum reinforcement. Contractor shall confirm minimum reinforcement of walls with SER prior to rebar fabrication.

POST-INSTALLED ANCHORS (INTO CONCRETE AND MASONRY)

REFERENCE STANDARDS: Conform to:
1) IBC Chapter 19 "Concrete"
2) ACI 318-11 "Building Code Requirements for Structural Concrete"
3) IBC Chapter 21 "Masonry"
4) ACI 530-11/ASCE 5-11/TMS402-11 "Building Code Requirements for Masonry Structures"

POST-INSTALLED ANCHORS: Install only where specifically shown in the details or allowed by SER. All post-Installed anchors types and locations shall be approved by the SER and shall have a current ICC-Evaluation Service Report that provides relevant design values necessary to validate the available strength exceeds the required strength. Submit current manufacturer's data and ICC ESR report to SER for approval regardless of whether or not it is a pre-approved anchor. Anchors shall be installed in strict accordance to ICC-ESR and manufacturer's instructions. No reinforcing bars shall be damaged during installation of post-installed anchors. Special inspection shall be per the TESTS and INSPECTIONS section. Anchor type, diameter and embedment shall be as indicated on drawings.

1. ADHESIVE ANCHORS: The following Adhesive-type anchoring systems have been used in the design and shall be used for anchorage to CONCRETE as applicable and in accordance with corresponding current ICC ESR report. Drilled-in anchor embedment lengths shall be as shown on drawings, or not less than 7 times the anchor nominal diameter (7D).
   a. SIMPSON "SET-XP" – ICC ESR 2508 for anchorage to CONCRETE

STRUCTURAL STEEL

REFERENCE STANDARDS: Conform to:
1) IBC Chapter 22 – "Steel"
2) ANSI/AISC 303-10 – "Code of Standard Practice for Steel Buildings & Bridges"
3) ANSI/AISC 325-10 – "Steel Construction Manual"
4) ANSI/AISC 360-10 – "Specification for Structural Steel Buildings"
5) AWS D1.1:2010 – "Structural Welding Code – Steel"
6) 2009 RCSC – "Specification for Structural Joints using High-Strength Bolts"

MATERIALS:
Structural steel materials shall conform to materials and requirements listed in AISC 360 section A3 including, but not limited to:
Wide Flange (W) Shapes .... ASTM A992, Fy = 50 ksi
Structural Plate (PL) .... ASTM A36, Fy = 36 ksi
Channel (C) & Angle (L) Shapes .... ASTM A36, Fy = 36 ksi
Bolts .... ASTM A307
Nuts .... ASTM A563
Washers (Hardened Flat or Beveled) .... ASTM F436, Grade and Finish per RCSC Table 2.1
Threaded Rods (anchor bolts) .... ASTM F1554, Gr. 36
Mild Threaded Rods .... ASTM A36, Fy = 36 ksi

ANCHORAGE to CONCRETE:
1) COLUMN ANCHOR RODS and BASE PLATES: All columns (vertical member assemblies weighing over 300 pounds) shall be provided with a **minimum of four ¾" diameter anchor rods**. Column base plates shall be at least ¾" thick, unless noted otherwise. Cast-in-place anchor rods shall be provided unless otherwise approved by the Engineer. Unless noted otherwise, embedment of cast-in-place anchor rods shall be 12 times the anchor diameter (12D).

FABRICATION:
1) Conform to AISC 360 Section M2 "Fabrication" and AISC 303 Section 6 "Shop Fabrication".
2) Quality Control (QC) shall conform to:
   a. AISC 360 Chapter N "Quality Control and Quality Assurance" and
   b. AISC 303 Section 8 "Quality Control".
   c. Fabricator and Erector shall establish and maintain written Quality Control (QC) procedures per AISC 360 section N3.
   d. Fabricator shall perform self-inspections per AISC 360 section N5 to ensure that their work is performed in accordance with Code of Standard Practice, the AISC Specification, Contract Documents and the Applicable Building Code.
   e. QC inspections may be coordinated with Quality Assurance inspections per Section N5.3 where fabricators QA procedures provide the necessary basis for material control, inspection, and control of the workmanship expected by the Special Inspector.

WELDING:
1) Welding shall conform to AWS D1.1 with Prequalified Welding Processes except as modified by AISC 360 section J2. Welders shall be qualified in accordance with AWS D1.1 and WABO requirements.
2) Use 70ksi strength, low-hydrogen type electrodes (E7018) or E71T as appropriate for the process selected.
3) Welding of high strength anchor rods is prohibited unless approved by Engineer.
4) Welding of headed stud anchors shall be in accordance with AWS D1.1 Chapter 7 "Stud Welding".

ERECTION:
1) Conform to AISC 360 Section M4 "Erection" and AISC 303 Section 7 "Erection".
2) Conform to AISC 360 Chapter N "Quality Control and Quality Assurance" and AISC 303 Section 8.
   a. The Erector shall maintain detailed erection quality control procedures that ensure that the work is performed in accordance with these requirements and the Contract Documents.
3) Steel work shall be carried up true and plumb within the limits defined in AISC 303 Section 7.13.
4) The contractor shall provide temporary bracing and safety protection required by AISC 360 Section M4.2 and AISC 303 Section 7.10 and 7.11.

PROTECTIVE COATING REQUIREMENTS:
1) SHOP PAINTING: Conform to AISC 360 Section M3 and AISC 303 Section 6.5 unless otherwise specified by the project specifications.
2) INTERIOR STEEL:
   a. Unless noted otherwise, ***do not paint*** any of the steel surfaces meeting the following conditions:
      - Concealed by the interior building finishes,
      - Fireproofed,
      - Embedded in concrete,
      - Welded; if area requires painting, do not paint until after weld inspections and non-destructive testing requirement, if any, are satisfied.
   b. Interior steel, exposed to view, shall be painted with one coat of shop primer unless otherwise indicated in the project specifications. Field touch-ups to match the finish coat or as otherwise indicated in the project specifications.

WOOD FRAMING

REFERENCE STANDARDS: Conform to:
(1) IBC Chapter 23 "WOOD"
(2) NDS - "2012 National Design Specification (NDS) for Wood Construction"
(3) ANSI/AF&PA – SDPWA-08: Special Design Provisions for Wind and Seismic
(4) APA PDS—04 Plywood Design Specification
(5) ANSI/TPI 1-2007 "National Design Standard for Metal-Plate-Connected Wood Truss Construction"
(6) BCSI "Guide to Good Practice for Handling, Installing & Bracing of Metal Plated Connected Wood Trusses"
(7) TPI DSB "Recommended Design Specification for Temporary Bracing of Metal Plate Connected Wood Trusses"
(8) APA Report TT-045B "Minimum Nail Penetration for Wood Structural Panel Connections Subject to Lateral Loads"

DEFERRED SUBMITTALS: Submit product data and proof of ICBO approval for framing members and fasteners that have been designed by others. Submit calculations prepared by the SSE in the state of Washington for all members and connections designed by others along with shop drawings. All necessary bridging, blocking, blocking panels and web stiffeners shall be detailed and furnished by the supplier. Temporary and permanent bridging shall be installed in conformance with the manufacturer's specifications. Deflection limits shall be as noted under DEFFERRED SUBMITTLALS section specific details. Products included are:

- Open-web wood trusses (Redbuilt or equal)

IDENTIFICATION: All sawn lumber and pre-manufactured wood products shall be identified by the grade mark or a certificate of inspection issued by the certifying agency.

MATERIALS:

- Sawn Lumber: Conform to grading rules of WWPA, WCLIB or NLGA and Table below. Finger jointed studs acceptable at interior walls only.

TABLE of SOLID SAWN LUMBER

Member Use	Size	Species	Grade
Wall Stud	2x4, 3x4, 2x6, 3x6	Doug Fir	No. 2
Sill Plate	2x4, 3x4, 2x6, 3x6	PT Doug Fir	No. 2
Post	4x4, 4x6, 4x8	Doug Fir Larch	No. 2
Floor or Roof Joist	2x6 through 2x12	Doug Fir Larch	No. 2
Beam	4x8 through 4x12	Doug Fir Larch	No. 2
Beam	6x8 through 6x12	Doug Fir Larch	No. 1
Post or Timber	6x6, 8x8	Doug-Fir Larch	No. 1

- Glued Laminated Timber: Conform to AITC 117-2004 "Standard Specifications for Structural Glue-laminated Timber of Softwood Species, Manufacturing and Design" and ANSI/AITC A190.1 "Structural Glued Laminated Timber." Camber all glued laminated beams, except cantilevered and continuous beams, to 3000' radius, unless shown otherwise on the plans.

TABLE of GLULAM and GRADE

Member	Sizes	Species	Comb. Symbol	Uses
Beams	All	DF/DF	24F–V4	Simple Spans
Beams	All	DF/DF	24F–V8	Continuous or with Cantilever Spans
Columns	All	DF	L2	Post, Truss Member

- Wood Structural Sheathing (Plywood): Wood APA-rated structural sheathing includes: all veneer plywood, oriented strand board, waferboard, particleboard, T1-11 siding, and composites of veneer and wood based material with T&G joint. **Architect** may disallow OSB. Confirm with **Architect**. Conform to "Construction and Industrial Plywood" based on Product Standard PS 1-07 by the U.S. Dept. of Commerce, and "Performance Standard for Wood-Based Structural-Use Panels" based on Product Standard PS 2-04 by the U.S. Dept. of Commerce and "Plywood Design Specification" based on APA PDS—04 by the American Plywood Association. Unless noted otherwise, sheathing shall comply with the following table:

TABLE of SHEATHING - Use, Minimum Thickness and Minimum APA Rating

Location	Thickness	Span Rating	Plywood Grade	Exposure
Roof	15/32"	32/16	C-D	1
Walls	15/32"	32/16	C-D	1

Unless noted otherwise on drawings, install roof and floor panels with long dimension across supports and with panel continuous over two or more spans. End joints shall occur over supports.

- Timber Connectors: Shall be "Strong Tie" by Simpson Company as specified in their latest catalog. Alternate connectors by other manufacturers may be substituted provided they have current ICC approval for equivalent or greater load capacities and are reviewed and approved by the SER prior to ordering. Connectors shall be installed per the manufacturer's instructions. Where connector straps connect two members, place one-half of the nails or bolts in each member. Where straps are used as hold-downs, nail straps to wood framing just prior to drywall application, as late as possible in the framing process to allow the wood to shrink and the building to settle. Premature nailing of the strap may lead to strap buckling and potential finish damage.

  Where connectors are in exposed exterior applications in contact with preservative treated wood (PT) other than CCA, connectors shall be either batch hot-dipped galvanized (HDG), mechanically galvanized (ASTM B695, Class 55 minimum) stainless steel, or provided with 1.85 oz/sf of zinc galvanizing equal to or better than Simpson ZMAX finish.

  Nail straps to wood framing as late as possible in the framing process to allow the wood to shrink and the building to settle. Premature nailing of the strap may lead to strap buckling and potential finish damage.

- Fasteners (nails, bolts, screws, etc) attaching timber connectors (joist hangers, post caps and bases, etc) to PT wood shall have similar corrosion resistance properties (matching protective treatments) as the protected connector. Fasteners (nails, bolts, screws, etc) attaching sawn timber members or sheathing (shear walls) to PT wood be corrosion resistant; nails and lag bolts shall be either HDG (ASTM A153) or stainless steel. Verify the suitability of the fastener protection/coating with the wood treatment chemical manufacturer/supplier.

  Provide washers under the heads and nuts of all bolts and lag screws bearing on wood.

- Lag Bolts/Bolts: Conform to ASTM A307 and IBC Section 2304.9.

NAILING REQUIREMENTS: Conform to IBC Section 2304.9 "Connections and fasteners." Unless noted on plans, nail per Table 2304.9.1. Nailing for roof/floor diaphragms/shear walls shall be per drawings. Nails shall be driven flush and shall not fracture the surface of sheathing. Alternate nails may be used but are subject to review and approval by the Structural Engineer. Substitution of staples for the nailing of rated sheathing is subject to review by the structural engineer prior to construction.

STANDARD LIGHT-FRAME CONSTRUCTION: Unless noted on the plans, construction shall conform to IBC Section 2308 "Conventional Light-Frame Construction."

NAILERS ON STEEL COLUMNS and BEAMS: Wood 3x nailers are generally required on all HSS columns and steel beams abutting or embedded within wood framing. Unless noted otherwise, attach with 5/8" diameter bolts or welded studs at 16" on centers. Wood nailers on beams supporting joist hangers shall not overhang the beam flange by more than ¼".

MOISTURE CONTENT: Wood material used for this project shall have maximum moisture content of 19% except for the pressure-treated wood sill plate. Refer to TESTING & INSPECTIONS for the verification of these limits. The maximum moisture content required may be less than 19% when based on a particular cladding/insulation system. Refer to the Architect's drawings, and project specifications, or with cladding installer for maximum recommended moisture content.

SHRINKANGE COMPENSATION FOR MECHANICAL, ELECTRICAL, AND PLUMBING SYSTEMS: MEP systems, including ductwork, pipes, and other elements that run continuously between levels shall be installed/designed in such a manner to accommodate shrinkage in the wood framing. Wood shrinkage amounts will vary depending on the construction process and materials used. The anticipated shrinkage under typical conditions is expected to range between 1/8" and 1/4" per floor.

CLADDING COMPATIBILTY: The Architect/Owner shall review the cladding and insulation systems proposed for the project with respect to their performance over wood studs with moisture contents greater than 19%. EIFS systems should be avoided on wood-framed projects due to problems with moisture proofing.

PRESERVATIVE TREATMENT (PT): Wood materials are required to be "treated wood" in accordance with IBC Section 2304.11. "Decay and Termite Protection" shall conform to the appropriate standards of the American Wood-Preservers Association (AWPA) for sawn lumber, glued laminated timber, round poles, wood piles and marine piles. Follow American Lumber Standards Committee (ALSC) quality assurance procedures. Products shall bear the appropriate mark. Fasteners or anchors in treated wood shall be of stainless steel or hot-dipped galvanized or as per IBC 2304.9.5.

Mud sill plates in normally dry interior applications may be treated with Sodium Borate (DOT - Disodium Octaborate Tetrahydrate) as recent studies have noted less connector corrosion potential than other available wood treatments or the original CCA treated sill plates. Wood treated with Sodium Borate shall be protected during shipment, storage and installation to minimize leaching of the water-soluble preservative from the lumber. Sodium borate pressure treated plates do not require hot-dipped galvanized connectors.

If using sill plates other than CCA or sodium borate, fasteners must be hot dipped galvanized or stainless steel. Fasteners (nails, bolts, screws, washers & lag screws) attaching timber connectors (joist hangers, post caps and bases, etc) to PT wood shall have similar corrosion resistance properties (matching protective treatments) as the protected connector; that is, use hot dipped galvanized or stainless steel fasteners. Fasteners (nails, bolts, screws, washers & lag screws) attaching sawn timber members or sheathing (shear walls) to Pressure Treated wood be corrosion resistant (hot dipped galvanized or stainless steel.

Always verify the suitability of the fastener protection/coating with the wood treatment chemical manufacturer/supplier.

DRAWING LEGEND

MARK	DESCRIPTION	MARK	DESCRIPTION
F2.0	FOOTING SYMBOL (REFER TO SPREAD FOOTING SCHEDULE)	I	INDICATES WIDE FLANGE COLUMN
P1	PILE CAP SYMBOL (REFER TO PILE CAP SCHEDULE)		INDICATES HOLLOW STRUCTURAL SECTION (HSS) COLUMN OR TUBE STEEL (TS) COLUMN
A	TILT–UP/PRECAST CONCRETE WALL CONNECTION SYMBOL (REFER TO CONNECTION DETAIL)		INDICATES HOLLOW STRUCTURAL SECTION (HSS) COLUMN OR STEEL PIPE COLUMN
W6	SHEAR WALL SYMBOL (REFER TO SHEAR WALL SCHEDULE)		INDICATES WOOD POST
1	REVISION TRIANGLE		INDICATES BUNDLED STUDS
1	TILT–UP/PRECAST CONCRETE WALL PANEL NUMBER (REFER TO TILT–UP/ PRECAST CONCRETE WALL ELEVATIONS)		INDICATES CONCRETE COLUMN
1	CMU WALL REINFORCING SYMBOL (REFER TO CMU WALL REINFORCING SCHEDULE)		INDICATES PRECAST CONCRETE COLUMN
8"	CONTINUITY PLATE LENGTH (REFER TO TYPICAL DETAIL)		INDICATES MOMENT FRAME CONNECTION
DS	INDICATES DOUBLE SHEAR CONNECTION (REFER TO THE DOUBLE SHEAR PLATE CONNECTIONS DETAIL)		INDICATES DRAG CONNECTION
SR	INDICATES NUMBER OF STUD RAIL REQUIRED AT COLUMN (REFER TO STUD RAIL DETAILS)		INDICATES WOOD OR STEEL STUD WALL
1	ROOF/FLOOR DIAPHRAGM NAILING SYMBOL (REFER TO DIAPHRAGM NAILING SCHEDULE)		INDICATES MASONRY/CMU WALL
C1	STEEL COLUMN SYMBOL (REFER TO STEEL COLUMN SCHEDULE)		INDICATES CONCRETE/TILT–UP CONCRETE WALL
T/SLAB X'–X"	ELEVATION SYMBOL (T/ REFERS TO COMPONENT THAT THE ELEVATION REFERENCES)		INDICATES WOOD OR STEEL STUD SHEAR WALL
3	STUD BUBBLE (INDICATES NUMBER OF STUDS REQUIRED IF EXCEEDS NUMBER SPECIFIED IN PLAN NOTE)		INDICATES BEARING WALL BELOW
S	INDICATES STEP IN FOOTING (REFER TO TYPICAL STEP IN FOOTING DETAIL)		INDICATES EXISTING WALL
X/SX.X	DETAILS OR SECTION CUT (DETAIL NUMBER/SHEET NUMBER)		POST–TENSION DEAD END (PLAN)
X SX.X	DETAILS OR SECTION CUT IN PLAN VIEW (DETAIL NUMBER/SHEET NUMBER)		POST–TENSION STRESSING END (PLAN)
X/SX.X	INDICATES LOCATION OF CONCRETE WALLS, SHEAR WALLS OR BRACED FRAME ELEVATIONS	3	POST–TENSION PROFILE (PLAN) (IN INCHES)
	SPAN INDICATOR (INDICATES EXTENTS OF FRAMING MEMBERS OR OTHER STRUCTURAL COMPONENTS)		INTERMEDIATE STRESSING (PLAN)
	INDICATES DIRECTION OF DECK SPAN		

ABBREVIATIONS

∠	Angle
AB	Anchor Bolt
ADDL	Additional
ADH	Adhesive
ALT	Alternate
ARCH	Architectural
B or BOT	Bottom
B/	Bottom Of
BLDG	Building
BLKG	Blocking
BMU	Brick Masonry Unit
BP	Baseplate
BRBF	Buckling Resisting Braced Frame
BRG	Bearing
BTWN	Between
℄	Centerline
C	Camber
CB	Castellated Beam
CIP	Cast in Place
CJ	Construction or Control Joint
CJP	Complete Joint Penetration
CLG	Ceiling
CLR	Clear
CMU	Concrete Masonry Unit
COL	Column
CONC	Concrete
CONN	Connection
CONST	Construction
CONT	Continuous
C'SINK	Countersink
CTRD	Centered
ø	Diameter
DB	Drop Beam
DBA	Deformed Bar Anchor
DBL	Double
DEMO	Demolish
DEV	Development
DF	Douglas Fir
DIAG	Diagonal
DIST	Distributed
DL	Dead Load
DN	Down
DO	Ditto
DP	Depth/Deep
DWG	Drawing
(E)	Existing
EA	Each
EF	Each Face
EL	Elevation
ELEC	Electrical
ELEV	Elevator
EMBED	Embedment
EQ	Equal
EQUIP	Equipment
EW	Each Way
EXP	Expansion
EXP JT	Expansion Joint
EXT	Exterior
FD	Floor Drain
FDN	Foundation
FIN	Finish
FLR	Floor
FRP	Fiberglass Reinforced Plastic
FTG	Footing
F/	Face of
GA	Gage
GALV	Galvanized
GEOTECH	Geotechnical
GL	Glue Laminated Timber
GWB	Gypsum Wall Board
HDR	Header
HF	Hem–Fir
HGR	Hanger
HD	Hold–down
HORIZ	Horizontal
HP	High Point
HSS	= TS (Hollow Structural Section)
IBC	International Building Code
ID	Inside Diameter
IE	Invert Elevation
IF	Inside Face
INT	Interior
k	Kips
KSF	Kips Per Square Foot
LF	Lineal Foot
LL	Live Load
LLH	Long Leg Horizontal
LLV	Long Leg Vertical
LP	Low Point
LONGIT	Longitudinal
LSL	Laminated Strand Lumber
LVL	Laminated Veneer Lumber
MAS	Masonry
MAX	Maximum
MECH	Mechanical
MEZZ	Mezzanine
MFR	Manufacturer
MIN	Minimum
MISC	Miscellaneous
NIC	Not In Contract
NTS	Not To Scale
OC	On Center
OCBF	Ordinary Concentric Braced Frame
OD	Outside Diameter
OF	Outside Face
OPNG	Opening
OPP	Opposite
OWSJ	Open Web Steel Joist
OWWJ	Open Web Wood Joist
ℙ	Plate
PAF	Powder Actuated Fastener
PC	Precast
PERP	Perpendicular
PLWD	Plywood
PP	Partial Penetration
PREFAB	Prefabricated
PSF	Pounds per Square Foot
PSI	Pounds Per Square Inch
PSL	Parallel Strand Lumber
P–T	Post–Tensioned
PT	Pressure Treated
R	Radius
RD	Roof Drain
REF	Refer/Reference
REINF	Reinforcing
REQD	Required
RET	Retaining
SCBF	Special Concentric Braced Frame
SCHED	Schedule
SHTHG	Sheathing
SIM	Similar
SMF	Special Moment Frame
SOG	Slab on Grade
SPEC	Specification
SQ	Square
SR	Studrail
SF	Square Foot
SST	Stainless Steel
STAGG	Stagger/Staggered
STD	Standard
STIFF	Stiffener
STL	Steel
STRUCT	Structural
SWWJ	Solid Web Wood Joist
SYM	Symmetrical
T	Top
T/	Top Of
T&B	Top & Bottom
TC AX LD	Top Chord Axial Load
TCX	Top Chord Extension
TDS	Tie Down System
T&G	Tongue & Groove
THKND	Thickened
THRD	Threaded
THRU	Through
TRANSV	Transverse
TYP	Typical
UBC	Uniform Building Code
UNO	Unless Noted Otherwise
URM	Unreinforced Masonry Unit
VERT	Vertical
W	Wide
W/	With
W/O	Without
WHS	Welded Headed Stud
WP	Working Point
WWF	Welded Wire Fabric
±	Plus or Minus

ELEMENTAL ARCHITECTURE

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OFFICE BUILDING FOR DUDLEY SMILES

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ISSAQUAH WA 98027

No.	Date	Issue
	05.31.16	PERMIT SET

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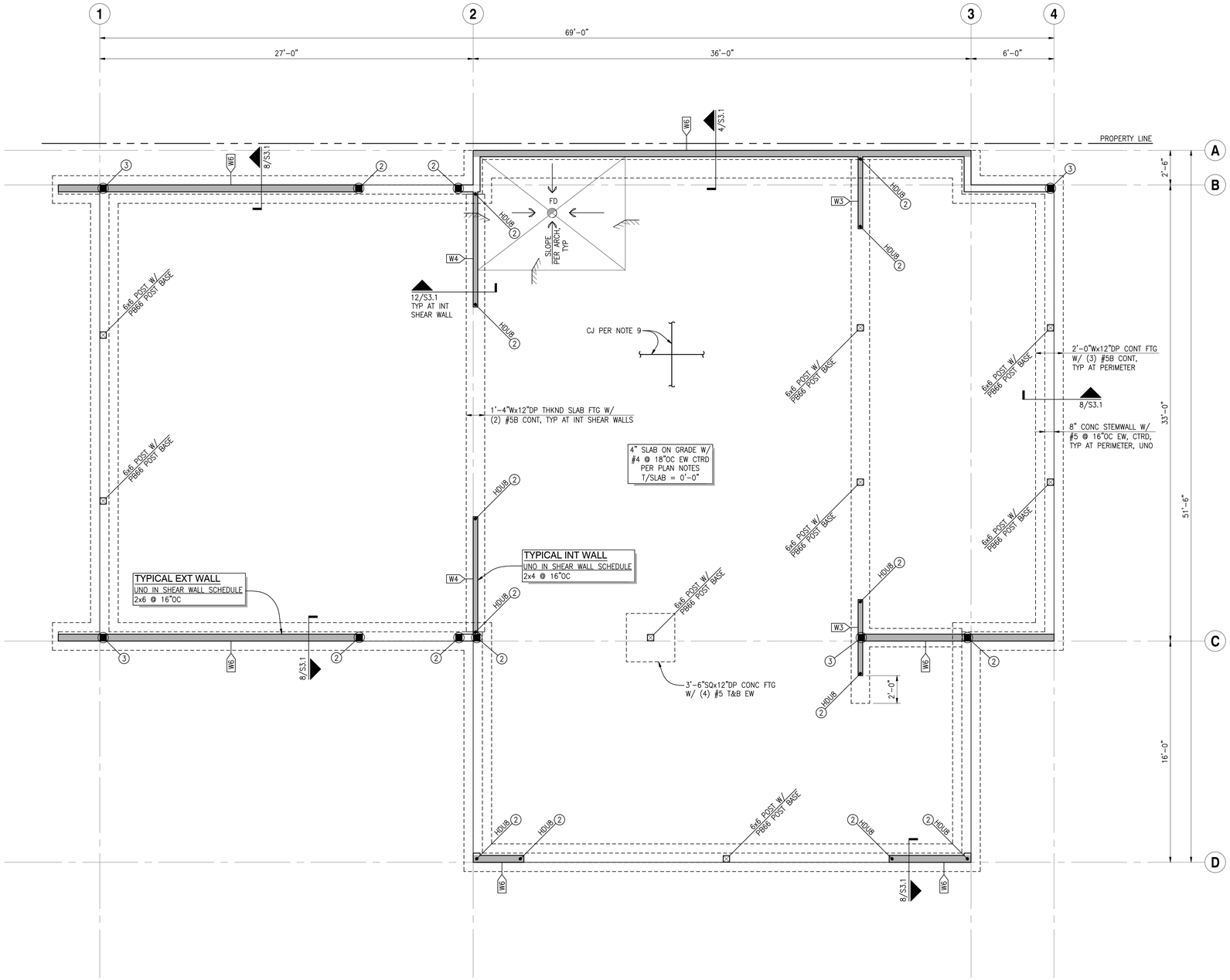
BRUCE YANG ZHONG
STATE OF WASHINGTON
34493
STRUCTURAL ENGINEER
PROFESSIONAL ENGINEER

DCI Job #:16011-0074

STRUCTURAL GENERAL NOTES, ABBREVIATIONS AND LEGEND

SI.2

Sheet



FOUNDATION PLAN NOTES:

1. STRUCTURAL GENERAL NOTES, DESIGN CRITERIA, ABBREVIATIONS AND LEGEND PER S1.1 AND S1.2.
2. VERIFY ALL DIMENSIONS AND ELEVATIONS WITH THE ARCHITECTURAL DRAWINGS.
3. CONTRACTOR SHALL LOCATE AND VERIFY THE FOLLOWING WITH OTHERS PRIOR TO POURING CONCRETE: ALL DOOR OPENINGS IN FOUNDATION WALLS; DRAINS AND SLOPES. ALL DUCTS, CHASES AND PIPES PER MECHANICAL, PLUMBING, ELECTRICAL AND SPRINKLER DRAWINGS. STAIR DETAILS AND GUARDRAILS PER ARCHITECTURAL DRAWINGS. CONCRETE CURBS AND LOCATIONS PER ARCHITECTURAL DRAWINGS.
4. TOP OF SLAB (T/SLAB) ELEVATION ASSUMED 0'-0". FOR ACTUAL T/SLAB ELEVATION REFER TO CIVIL AND ARCHITECTURAL DRAWINGS. PROVIDE 6 MIL VAPOR BARRIER BELOW SLAB AT INTERIOR SPACES. PROVIDE FREE-DRAINING GRANULAR FILL PER GEOTECH REPORT.
5. TYPICAL TOP OF INTERIOR (T/INTERIOR) FOOTING ELEVATION PER SECTIONS, UNO. TYPICAL TOP OF EXTERIOR (T/EXTERIOR) FOOTING ELEVATIONS PER ARCHITECTURAL.
6. ALL FOOTINGS AND SLABS TO BEAR ON COMPETENT NATIVE SOIL AND/OR STRUCTURAL FILL. SUBGRADE PREPARATION, STRUCTURAL FILL, FOOTING DRAINS, AND OTHER REQUIREMENTS PER GEOTECH REPORT AS NOTED IN THE STRUCTURAL GENERAL NOTES.
7. ALL WOOD EXPOSED TO CONCRETE, WEATHER, OR WITHIN 8" OF FINISHED GRADE SHALL BE PRESSURE-TREATED.
8. MOISTURE PROOF ALL CONCRETE STEM AND BASEMENT WALLS PER ARCHITECT.
9. CJ INDICATES CONTROL JOINT (ARCHITECT TO CONFIRM LOCATION), REQUIREMENTS PER 2/S3.1.
10. TYPICAL DETAILS PER:

1/S3.1	STANDARD HOOKS AND BAR BENDS
3/S3.1	TYPICAL CONCRETE LAP SPLICE SCHEDULE
5/S3.1	TYPICAL CORNER REINFORCING AT CONCRETE FOOTINGS
6/S3.1	TYPICAL CORNER REINFORCING AT CONCRETE STEMWALLS
7/S3.1	TYPICAL STEPPED FOOTING

STUD AND SHEAR WALL PLAN NOTES:

1. LUMBER GRADE PER STRUCTURAL GENERAL NOTES.
2. HEADERS SHOWN ON FRAMING PLAN SHALL BE SUPPORTED BY (1) TRIMMER AND (1) KING STUD MINIMUM, UNO. WHERE MORE THAN (1) TRIMMER IS REQUIRED, THE NUMBER OF TRIMMER STUDS SHALL BE NOTED THUS: ◯-②. TRIMMERS TO BE CONTINUOUS TO THE FOUNDATION.
3. BEAMS SHOWN ON FRAMING PLAN SHALL BE SUPPORTED BY (2) BUNDLED STUDS MINIMUM, UNO. WHERE MORE THAN (2) BUNDLED STUDS ARE REQUIRED, THE NUMBER OF BUNDLED STUDS SHALL BE NOTED THUS: ◯-③. BUNDLED STUDS TO BE CONTINUOUS TO THE FOUNDATION.
4. SHEAR WALL AND NAILING REQUIREMENTS PER SHEAR WALL SCHEDULE 8/S4.1.
5. TYPICAL SHEAR WALL ELEVATION PER 10/S4.1.
6. HD 2X 24 INDICATES HOLD-DOWN TYPE PER HOLD-DOWN SCHEDULE 6/S4.1
7. TYPICAL HOLD-DOWN ELEVATION PER 12/S4.1.
8. ANCHOR BOLTS TO BE 5/8"ø x 7" MINIMUM EMBEDMENT PER 9/S3.1 AND 10/S4.1. PROVIDE HOT-DIPPED GALVANIZED ANCHOR BOLTS AT PRESSURE-TREATED SILL PLATES. HOT-DIPPED GALVANIZED ANCHOR BOLTS ARE NOT REQUIRED AT SODIUM BORATE PRESSURE TREATED PLATES PER STRUCTURAL GENERAL NOTES.
9. TYPICAL DETAILS PER

10/S4.1	TYPICAL SHEAR WALL ELEVATION
4/S4.2	TYPICAL PLATE SPLICE DETAIL
11/S4.2	TYPICAL STUD WALL OPENING (HEADER) DETAIL

FIRST FLOOR / FOUNDATION PLAN

SCALE: 1/4"=1'-0"

N

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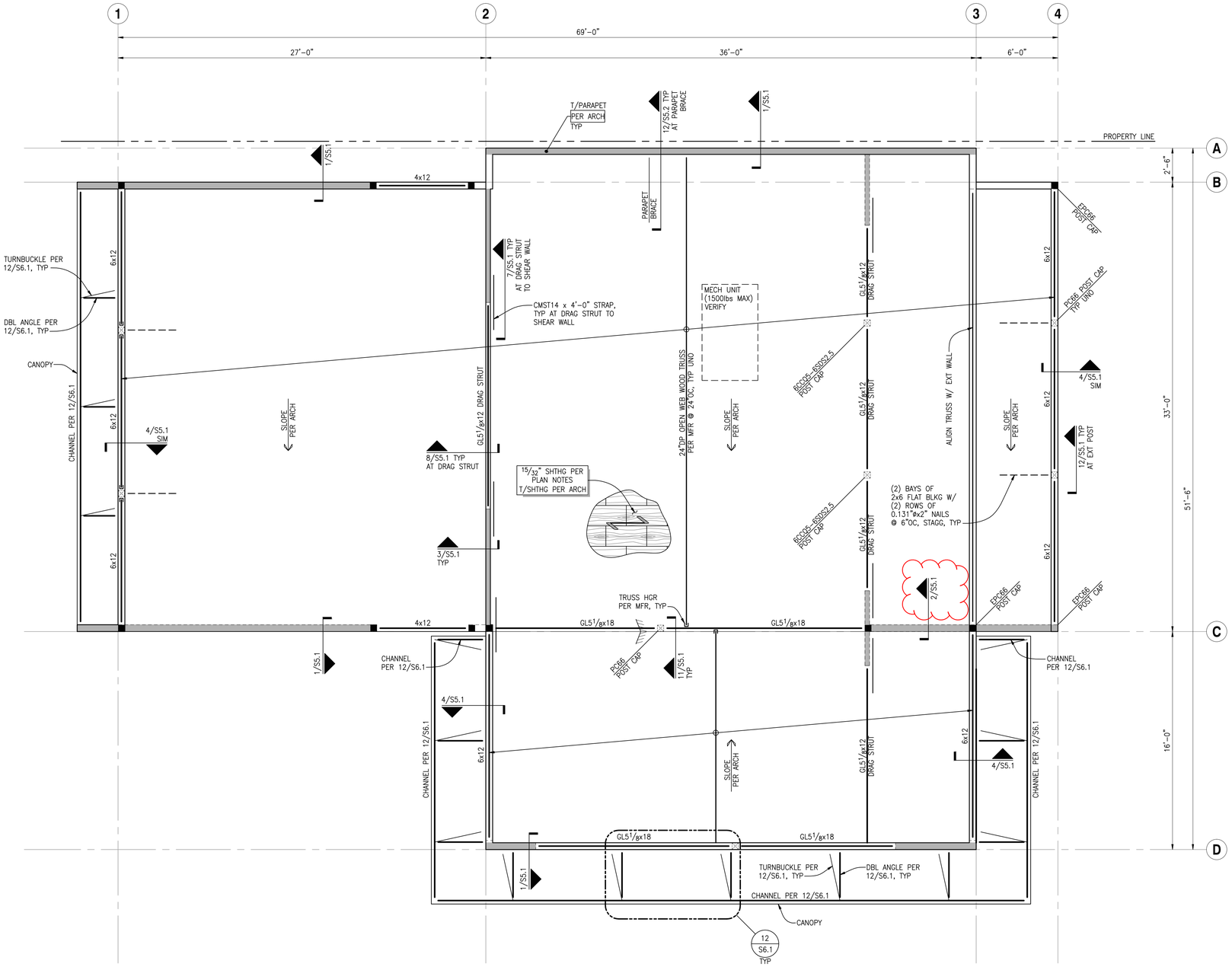
BRUCE YANG ZHONG
STATE OF WASHINGTON
34493
REGISTERED PROFESSIONAL ENGINEER

DCI Job #:16011-0074

STRUCTURAL FIRST FLOOR/ FOUNDATION PLAN

S2.1

Sheet



ROOF FRAMING PLAN NOTES:

1. STRUCTURAL GENERAL NOTES, DESIGN CRITERIA, ABBREVIATIONS AND LEGEND PER S1.1 AND S1.2.
2. VERIFY ALL DIMENSIONS AND ELEVATIONS WITH THE ARCHITECT'S DRAWINGS.
3. ALL DUCTS, CHASES AND PIPES SHALL BE PER MECHANICAL, PLUMBING, ELECTRICAL AND SPRINKLER DRAWINGS. STAIR DETAILS AND GUARDRAILS PER ARCHITECTURAL DRAWINGS.
4. ROOF SHEATHING PER PLAN AND STRUCTURAL GENERAL NOTES. SHEATHING TO BE NAILED TO ROOF FRAMING WITH 0.131"ø x2 1/2" NAILS @ 6"OC AT PANEL EDGES AND @ 12"OC FIELD, UNO. LAY SHEATHING WITH FACE GRAIN (LONG DIRECTION) PERPENDICULAR TO SUPPORTS AND STAGGER PANEL END JOINTS. ALLOW 1/8" SPACE BETWEEN PANEL ENDS AND EDGES. PROVIDE PANEL SHEATHING CLIPS CENTERED BETWEEN FRAMING AT UNBLOCKED SHEATHING EDGES AS REQUIRED BY ROOFING WARRANTY.
5. ALL 2x HANGERS TO BE FACE MOUNT TYPE LUS, UNO. GLULAM, PARALLAM AND MICROLLAM HANGERS ARE AS SPECIFIED ON PLAN.
6. HEADERS SHOWN BUT NOT SPECIFIED ARE TO BE (2) 2x10 MINIMUM. HEADER SUPPORTS PER STUD AND SHEAR WALL PLAN ON FLOOR BELOW.
7. BEAMS ARE FLUSH FRAMED WITH JOISTS UNLESS NOTED OTHERWISE ON DETAILS, OR ON PLANS AS "DB" INDICATING THAT DROPPED BEAM FRAMING IS REQUIRED. BEAM SUPPORTS PER STUD AND SHEAR WALL PLAN ON LEVEL BELOW. PROVIDE A35 CLIP EACH SIDE OF FLUSH BEAMS THAT BEAR ON DOUBLE TOP PLATES.
8. PROVIDE SIMPSON H2.5A TIES AT ALL ROOF JOISTS, TRUSSES TYPICAL.
9. PROVIDE SOLID BLOCKING OVER ALL SHEAR WALLS AND BEARING WALLS. AT SHEAR WALLS PARALLEL TO FRAMING, ALIGN JOIST OR TRUSS OVER SHEAR WALL (ADDITIONAL JOISTS OR TRUSSES MAY BE REQUIRED).
10. ALL RIM JOISTS TO BE 1 1/2" LSL MINIMUM UNO.
11. ROOF TRUSSES SHALL BE DESIGNED FOR THE FOLLOWING CRITERIA:
    - ROOF SYSTEM TO BE BIDDER DESIGNED. ROOF PLAN SHOWN IS A SUGGESTED LAYOUT. CHANGES MUST BE SUBMITTED TO THE ENGINEER-OF-RECORD THRU THE ARCHITECT WITH BEARING POINTS AND REACTIONS TO STRUCTURE.
    - TRUSS LAYOUT SHOWN IS APPROXIMATE. TRUSS SUPPLIER IS RESPONSIBLE FOR FINAL TRUSS LAYOUT AND CONFIGURATION. NOTIFY ENGINEER OF REVISIONS TO PLAN.
    - STANDARD DEAD AND LIVE LOADS AND SUBMITTAL INFORMATION PER STRUCTURAL GENERAL NOTES.
    - ROOF TRUSSES SHALL BE DESIGNED FOR ADDITIONAL LOADS FROM MECHANICAL UNITS. CONTRACTOR TO PROVIDE THE TRUSS SUPPLIER WITH LOCATIONS AND SUPPORT CONDITIONS OF ALL MECHANICAL, ELECTRICAL, PLUMBING, AND SPRINKLER LOADS. SPECIAL TRUSS SHAPES AND OPENING REQUIREMENTS ARE AS DESIGNATED ON PLANS.
    - PROVIDE SIMPSON H1 OR H2.5A HURRICANE TIES AT ALL ROOF TRUSSES AND ROOF JOISTS, TYPICAL.
    - TRUSS HANGERS SHALL BE SUPPLIED AND DESIGNED BY THE TRUSS SUPPLIER.
    - TRUSS MANUFACTURER TO DESIGN BEARING AT TOP PLATES FOR COMPRESSION PERPENDICULAR TO GRAIN f'c = 625psi.
12. BEARING STUD, SHEAR WALL, HOLD-DOWN, POST SIZE, AND POST CAP AND BASE REQUIREMENTS BELOW PER STUD AND SHEAR WALL PLAN.
13. TYPICAL DETAILS:

    9/S5.1 NON-STRUCTURAL PARTITION WALL PARALLEL TO ROOF FRAMING
    10/S5.1 NON-STRUCTURAL PARTITION WALL PERPENDICULAR TO ROOF FRAMING

ROOF FRAMING PLAN

SCALE: 1/4"=1'-0"

N

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DCI Job #:16011-0074

STRUCTURAL ROOF FRAMING PLAN

S2.2
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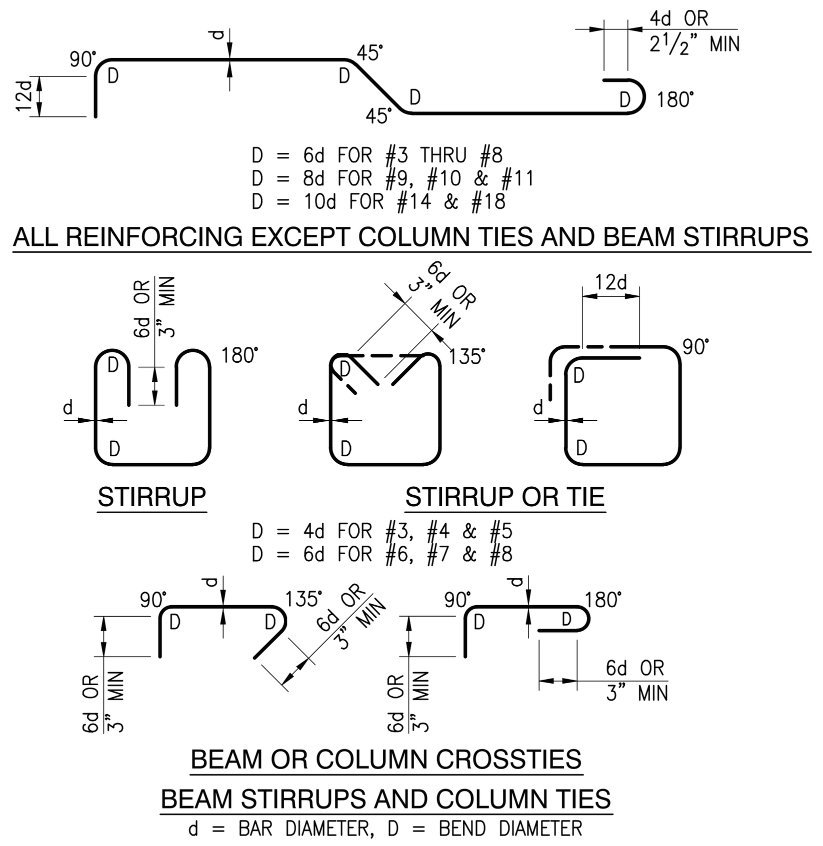
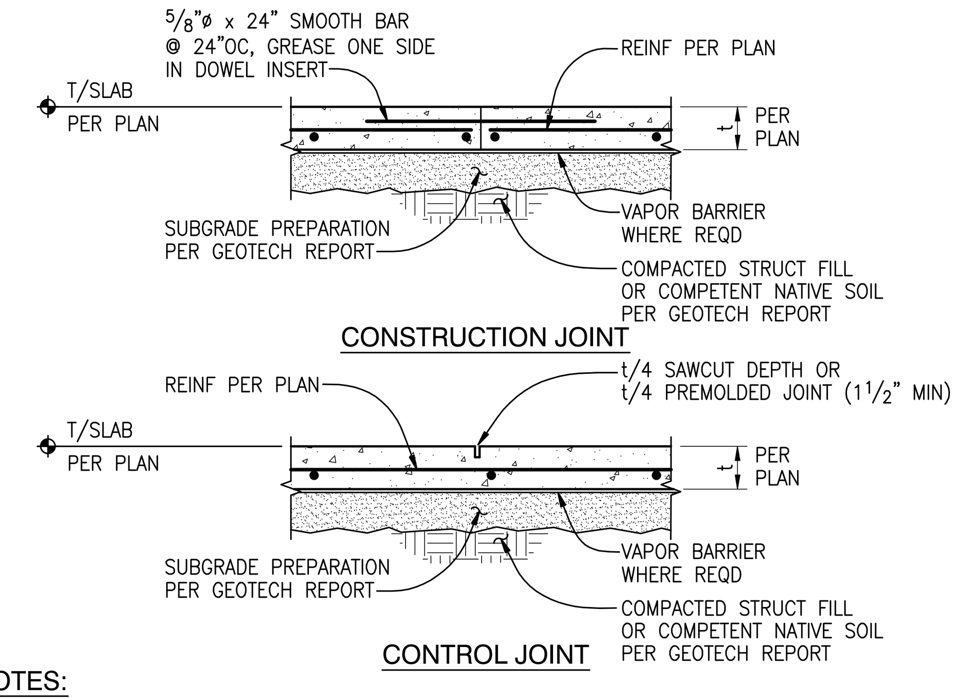


NOTE:

TIES AND CROSSTIES FOR SHEAR WALL BOUNDARY ELEMENTS SHALL BE DETAILED AS COLUMN TIES/CROSSTIES.

STANDARD HOOKS AND BENDS - BEAM STIRRUPS AND COLUMN TIES (1)

03400 (FOR REVISIONS TO STANDARD HOOKS & BENDS REF TO CURRENT ACI) SCALE: NONE



NOTES:

1. USE "EARLY ENTRY DRY-CUT SAW" AS SOON AS POSSIBLE WITHOUT CAUSING RAVELING OF CONCRETE EDGES. SAWCUT ALONG SHORT DIRECTION OF POUR FIRST.
2. ALIGN A CONSTRUCTION OR CONTROL JOINT WITH RE-ENTRANT SLAB CORNERS, EACH WAY, TYPICAL.
3. PROVIDE CONSTRUCTION/CONTROL JOINT TO ENCLOSE APPROXIMATE SQUARE AREAS 225 SQUARE FEET MAXIMUM, WITH A MAXIMUM PANEL ASPECT RATIO OF 1.3 TO 1.0.
4. CONTRACTOR TO SUBMIT CONSTRUCTION/CONTROL JOINT PLAN TO STRUCTURAL ENGINEER OF RECORD FOR REVIEW/APPROVAL.

TYPICAL SLAB ON GRADE JOINT DETAILS WITH REINFORCING (2)

03201 SCALE: 3/4"=1'-0"

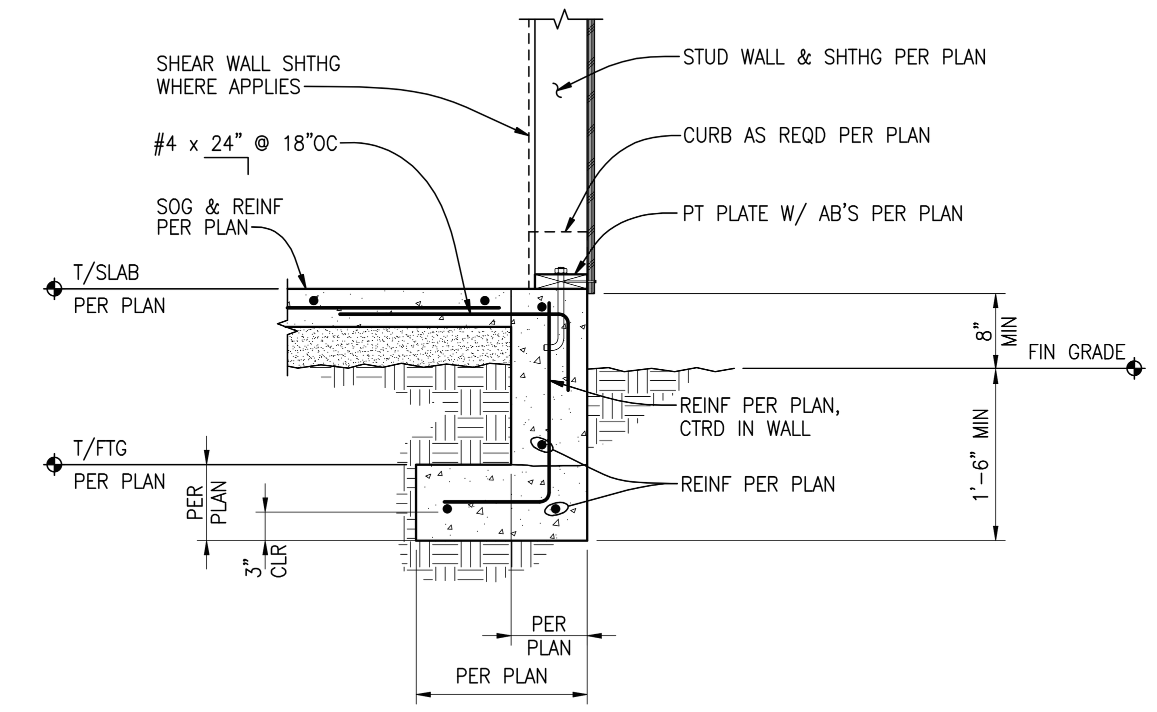
GRADE 60 REINFORCING					
BAR SIZE	MISCELLANEOUS BARS		TOP BARS (see note #3)		HOOKED BARS
	Ld	Splice	Ld	Splice	Ldh
f'c = 2500psi					
#3	18	24	24	31	9
#4	24	32	32	41	12
#5	30	39	39	51	15
#6	36	47	47	61	18
#7	53	69	69	89	21
#8	60	78	78	102	24
#9	68	88	88	115	28
#10	77	100	100	129	31
#11	85	110	110	143	34

NOTES:

1. ALL TABULATED VALUES ARE IN INCHES.
2. VALUES FOR UNCOATED REINFORCING AND NORMAL WEIGHT CONCRETE WITH CLEAR SPACING > db, CLEAR COVER > db AND MINIMUM STIRRUPS OR TIES THROUGHOUT Ld OR CLEAR SPACING > 2db AND CLEAR COVER > db.
3. TOP BAR = HORIZONTAL REINFORCING WITH MORE THAN 12" OF FRESH CONCRETE BELOW OR AS NOTED ON DOCUMENTS AS "TOP BAR".

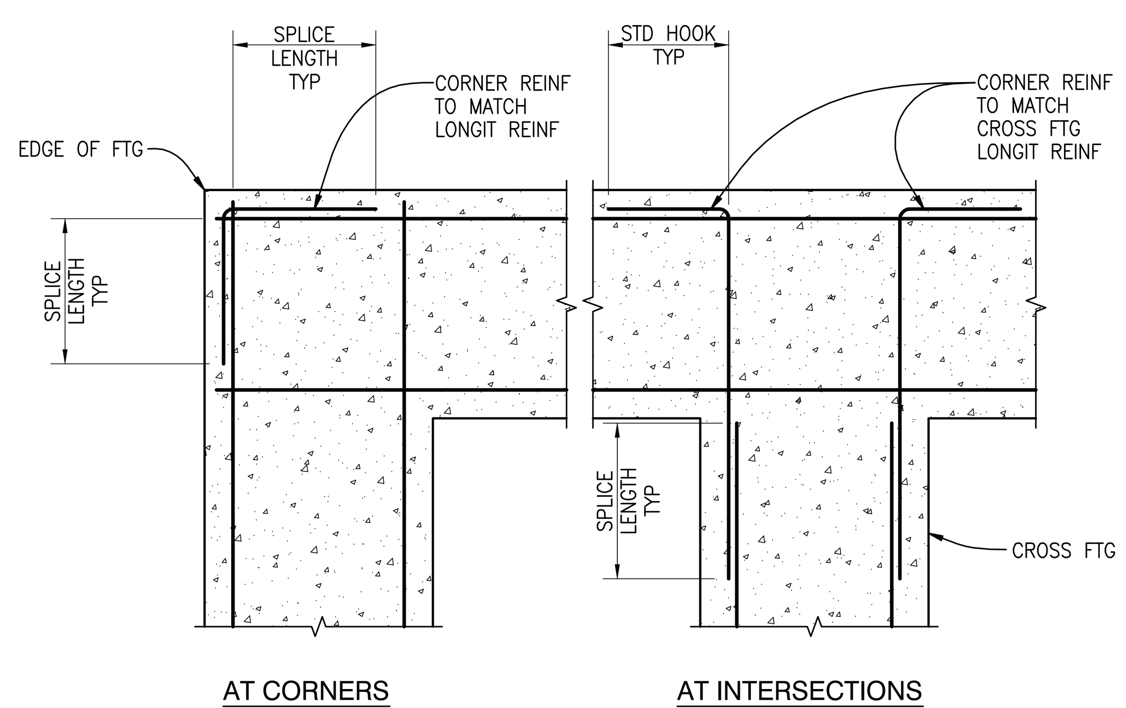
LAP SPLICE AND DEVELOPMENT LENGTH SCHEDULE (3)

01403 SCALE: NONE



EXTERIOR FOOTING AND STEMWALL AT STUD WALL (4)

03031M SCALE: 3/4"=1'-0"

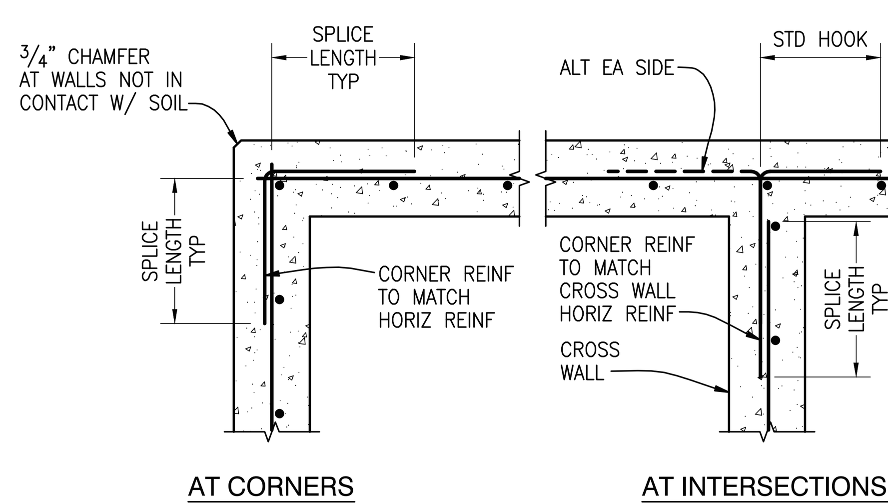


NOTES:

1. SPLICE LENGTHS PER LAP SPLICE AND DEVELOPMENT LENGTH SCHEDULE.
2. FOOTING REINFORCING PER PLAN OR ELEVATIONS, SECTIONS AND DETAILS.

PLAN - TYPICAL CORNER REINFORCING AT CONCRETE FOOTINGS (5)

03907 SCALE: 3/4"=1'-0"

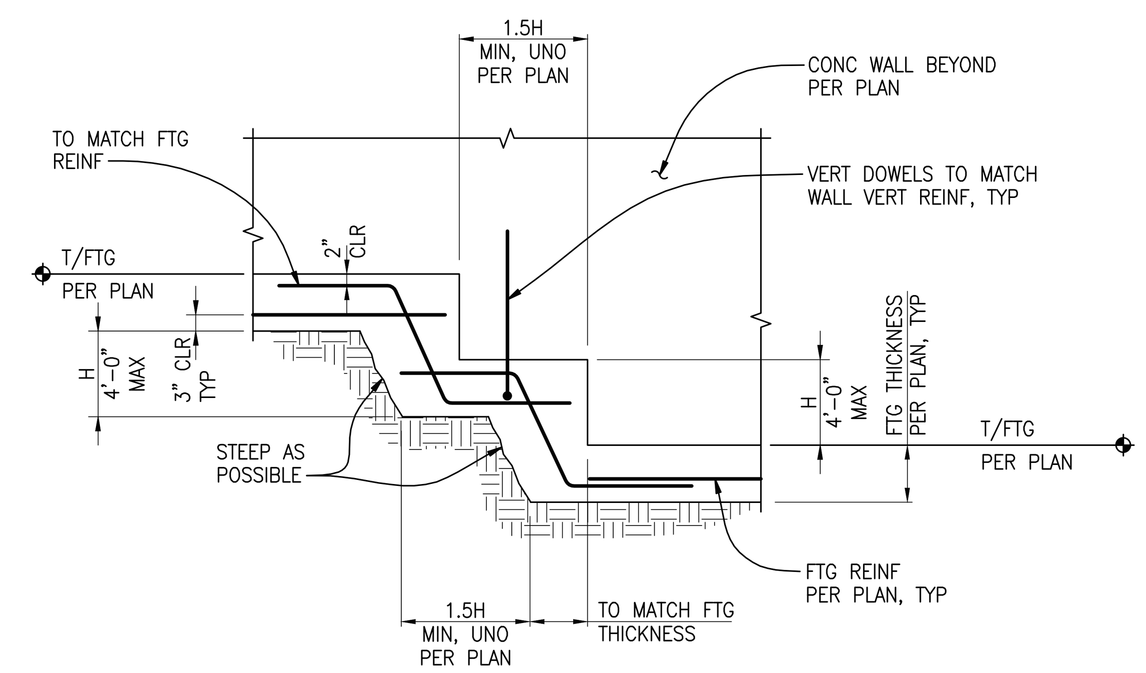


NOTES:

1. SPLICE LENGTHS PER LAP SPLICE AND DEVELOPMENT LENGTH SCHEDULE.
2. WALL REINFORCING PER PLAN OR ELEVATIONS, SECTIONS AND DETAILS.
3. AT FOOTINGS AND STEMWALLS, CORNER REINFORCING TO MATCH FOOTING AND STEMWALL HORIZONTAL REINFORCING.

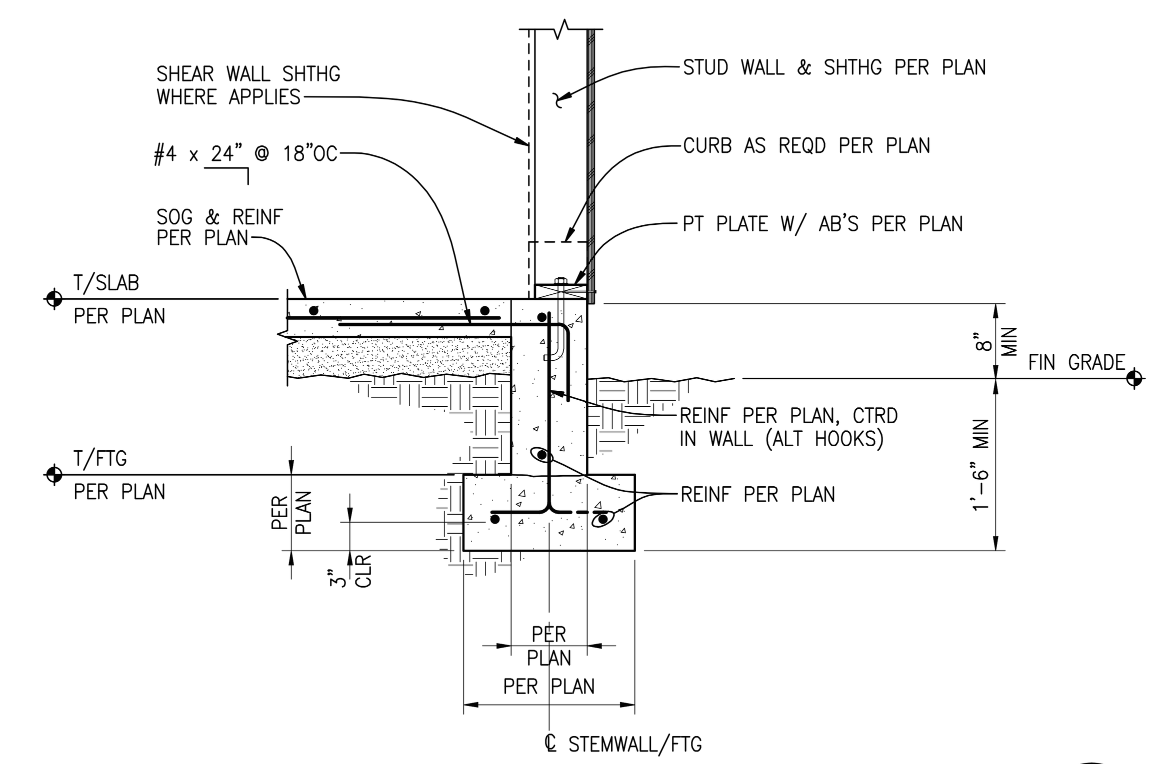
PLAN - TYPICAL CORNER REINFORCING AT CONCRETE WALLS (6)

03402 (SINGLE MAT) SCALE: 3/4"=1'-0"



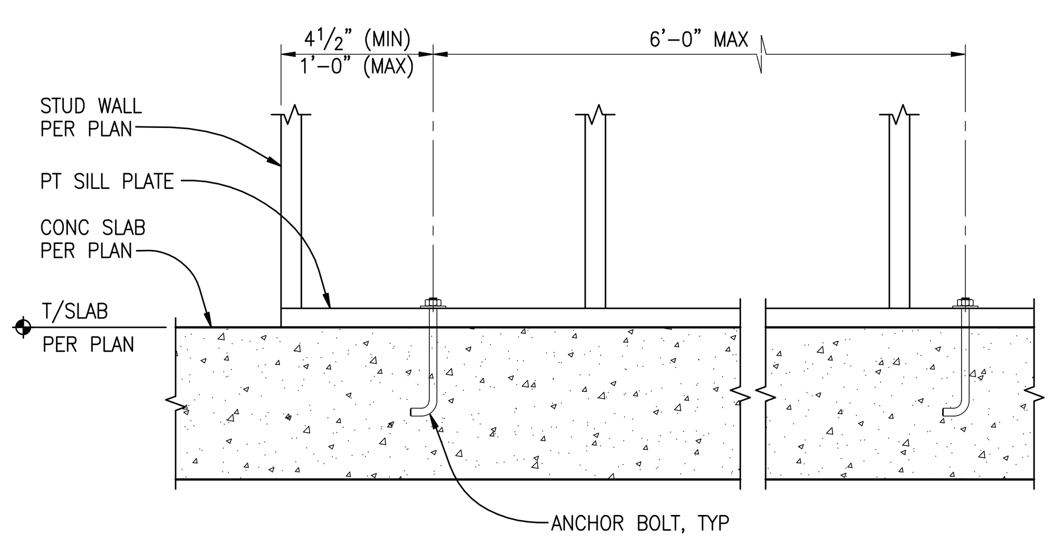
TYPICAL STEPPED FOOTING (7)

03901 SCALE: NONE



EXTERIOR FOOTING AND STEMWALL AT STUD WALL (8)

03031 SCALE: 3/4"=1'-0"

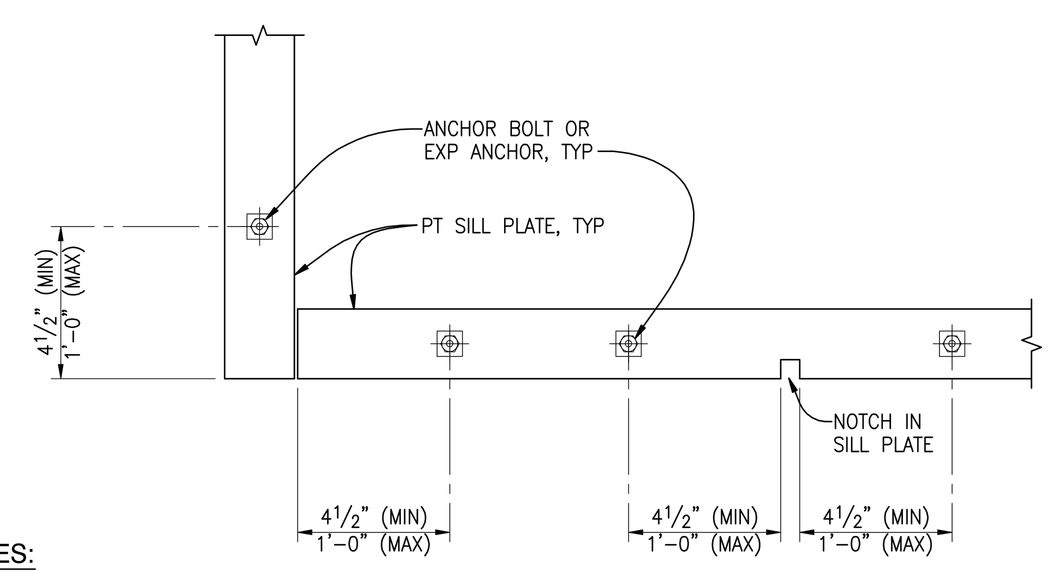


NOTES:

1. USE 5/8"ø ANCHOR BOLTS WITH 7" MINIMUM EMBEDMENT INTO CONCRETE SLAB.
2. EACH SILL PLATE PIECE SHALL HAVE (2) BOLTS MINIMUM. HOLD-DOWN ANCHORS ARE NOT TO BE CONSIDERED AN ANCHOR BOLT.
3. LOCATE BOLTS WITHIN 1'-0" OF SILL PLATE PIECE ENDS AND AT 6'-0"OC MAXIMUM.
4. USE PLATE WASHER PER SHEAR WALL SCHEDULE AT EACH BOLT. STANDARD CUT WASHERS ARE ACCEPTABLE AT NON-SHEAR WALLS.
5. DO NOT DRILL OVERSIZE HOLES THRU SILL PLATE. USE 11/16"ø DRILL BIT.
6. SILL PLATE THICKNESS AND FASTENING AT SHEAR WALLS PER SHEAR WALL SCHEDULE.
7. CONTACT THE ENGINEER-OF-RECORD FOR POST INSTALLED ANCHOR OPTIONS.

TYPICAL SILL PLATE ANCHORAGE TO CONCRETE (9)

06910 SCALE: 1"=1'-0"

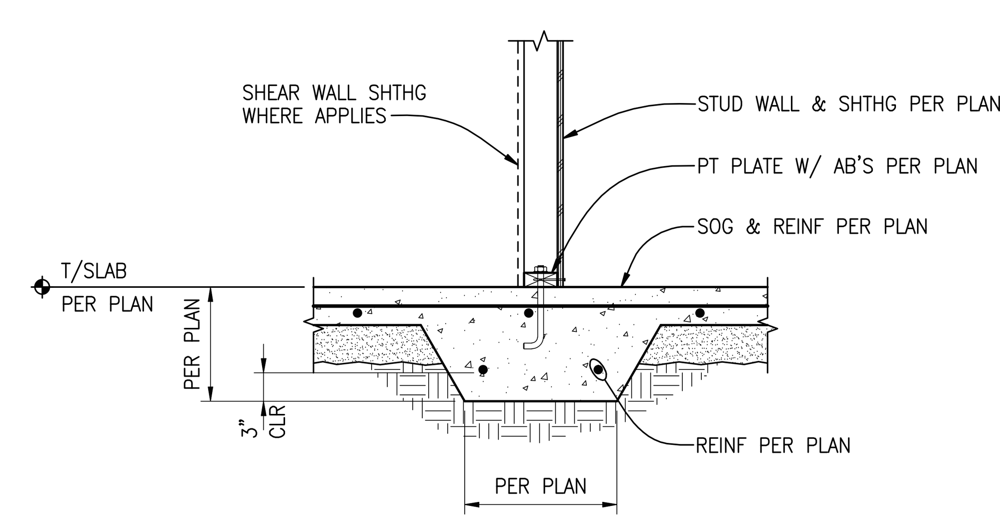


NOTES:

1. USE 5/8"ø ANCHOR BOLT PER 9/S3.1.
2. EACH SILL PLATE PIECE SHALL HAVE (2) BOLTS MINIMUM. HOLD-DOWN ANCHORS ARE NOT TO BE CONSIDERED AN ANCHOR BOLT.
3. LOCATE BOLTS WITHIN 1'-0" OF SILL PLATE PIECE ENDS AND AT 6'-0"OC MAXIMUM.
4. USE PLATE WASHER PER SHEAR WALL SCHEDULE AT EACH BOLT. STANDARD CUT WASHERS ARE ACCEPTABLE AT NON-SHEAR WALLS.
5. DO NOT DRILL OVERSIZE HOLES THRU SILL PLATE. USE 11/16"ø DRILL BIT.
6. SILL PLATE THICKNESS AND FASTENING AT SHEAR WALLS PER SHEAR WALL SCHEDULE.
7. CONTACT THE ENGINEER-OF-RECORD FOR POST INSTALLED ANCHOR OPTIONS.

PLAN - TYPICAL SILL PLATE ANCHORAGE TO CONCRETE (10)

06911 SCALE: 1"=1'-0"



NOTE:

HORIZONTAL COLD JOINT BETWEEN FOOTING AND SLAB NOT PERMITTED.

INTERIOR THICKENED SLAB FOOTING AT STUD WALL (12)

03020 SCALE: 3/4"=1'-0"

FOR PERMIT

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CHRIS PARDO DESIGN
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Stated drawing scale is based on 34x22 sheet.

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OFFICE BUILDING FOR DUDLEY SMILES

5655 221ST PLACE SE
ISSAQUAH WA 98027

No.	Date	Issue
	05.31.16	PERMIT SET

BRUCE YANG ZHONG, STATE OF WASHINGTON, 34493, STRUCTURAL ENGINEER

DCI Job #:16011-0074

STRUCTURAL FOUNDATION DETAILS

S3.1
Sheet

HOLD-DOWN/STRAP SCHEDULE - HEM-FIR STUDS

[1, 2, 7, 11] ← INDICATES FOOTNOTES

	TYPE	NUMBER OF STUDS/POST [3, 12]	NAILS, SCREWS OR BOLTS	ANCHOR [4] DIAMETER [10]	CONCRETE EMBEDMENT/CAPACITY: STEMWALL [5] EMBED CIP [6, 14]	STEMWALL [5] CAPACITY	FOOTING EMBED CIP [6]	FOOTING CAPACITY	NOTES
CONCRETE TO WOOD	LSTHD8(RJ)	(2) 2x	(20) 0.148"øx3" NAILS	----	----	1.95k / 1.61k	----	1.95k / 1.61k	[13]
	STHD10(RJ)	(2) 2x	(28) 0.148"øx3" NAILS	----	----	2.94k / 2.18k	----	2.94k / 2.18k	[13]
	STHD14(RJ)	(2) 2x	(30) 0.148"øx3" NAILS	----	----	3.81k / 3.5k	----	3.81k / 3.5k	[13]
	HDU2	(2) 2x	(6) SDS$\frac{1}{4}$x$2\frac{1}{2}$	$\frac{5}{8}$"ø	10"	2.22k	8"	2.22k	----
	HDU4	(2) 2x	(10) SDS$\frac{1}{4}$x$2\frac{1}{2}$	$\frac{5}{8}$"ø	10"	3.3k	8"	3.3k	----
	HDU5	(2) 2x	(14) SDS$\frac{1}{4}$x$2\frac{1}{2}$	$\frac{5}{8}$"ø	10"	4.1k	8"	4.1k	----
	HDU8	(3) 2x	(20) SDS$\frac{1}{4}$x$2\frac{1}{2}$	$\frac{7}{8}$"ø	10"	5.7k	10"	5.7k	----
	HDU11	(1) 4x6 OR (1) 6x	(30) SDS$\frac{1}{4}$x$2\frac{1}{2}$	1"ø	10"	6.9k	12"	6.9k	----
	HDU14	(1) 6x	(36) SDS$\frac{1}{4}$x$2\frac{1}{2}$	1"ø	10"	7.8k	12"	10.4k	----
	HD12	(1) 6x6	(4) 1"ø	$1\frac{1}{8}$"ø	10"	8.6k	15"	12.7k	----
	HD19	(1) 6x6	(5) 1"ø	$1\frac{1}{4}$"ø	10"	9.5k	15"	16.2k	
WOOD TO WOOD	CS16	(1) 2x	(22) 0.148"øx3" NAILS	----	----	----	----	1.7k	[9]
	CS14	(2) 2x	(30) 0.148"øx3" NAILS	----	----	----	----	2.5k	[9]
	MST48	(2) 2x	(32) 0.162"øx$3\frac{1}{2}$" NAILS	----	----	----	----	3.4k	[8, 9]
	MST60	(2) 2x	(46) 0.162"øx$3\frac{1}{2}$" NAILS	----	----	----	----	5.4k	[8, 9]
	CMST14	(2) 2x	(76) 0.148"øx3" NAILS	----	----	----	----	6.5k	[9]
	CMST12	(2) 2x	(98) 0.148"øx3" NAILS	----	----	----	----	9.22k	[9]

NOTES:

[1] SOME HOLD-DOWN TYPES NOTED MAY NOT BE USED ON THIS PROJECT.

[2] TYPICAL HOLD-DOWN DETAILS PER 9/S4.1 AND 12/S4.1. ANCHOR REINFORCEMENT REQUIRED AT STEMWALLS.

[3] PROVIDE PANEL EDGE NAILING PER SHEAR WALL SCHEDULE AT HOLD-DOWN STUDS/POST.

[4] BASED ON MINIMUM f'c = 3000 PSI CONCRETE.

[5] STEMWALLS SHALL BE 8" WIDE x 18" TALL MINIMUM.

[6] CAST-IN-PLACE (CIP) TYPE THREADED RODS AT HOLD-DOWNS SHALL HAVE TWO HEX HEAD NUTS WITH OVERSIZED WASHER.

[7] INCLUDES 1.6 LOAD DURATION INCREASE FOR WOOD.

[8] BASED ON $11\frac{7}{8}$" DEEP FLOOR JOIST.

[9] TOTAL NAILS SPECIFIED, USE HALF THE NAILS AT THE STUDS ABOVE AND BELOW LEVEL BEING CONNECTED.

[10] AT PRESSURE TREATED SILLS, USE HOT DIPPED GALVANIZED BOLTS.

[11] POST INSTALLED HOLD-DOWN OPTIONS MAY BE AVAILABLE AT SOME CONDITIONS. CONTACT ENGINEER OF RECORD PRIOR TO CONSTRUCTION.

[12] NAIL LAMINATE MULTIPLE 2x STUDS WITH PLATE NAILING PER SHEAR WALL SCHEDULE.

[13] MIDWALL/CORNER
WALL END

[14] STUD WALLS SHALL BE 2x6, CENTER HOLD-DOWN IN STUD WALL.

SHEAR WALL SCHEDULE

W6 FOR 0.131"øx$2\frac{1}{2}$" NAILS IN HEM-FIR (2012 IBC) [17]

SOME SHEAR WALL TYPES NOTED MAY NOT BE USED ON THIS PROJECT.

WALL TYPE	WALL SHEATHING APA-RATED [1, 2, 12, 13]	NAIL SIZE & SPACING AT ALL PANEL EDGES [4, 5]	BLOCKING & STUD SIZE AT ADJOINING PANEL EDGES [3, 6, 14]	RIM JOIST OR BLOCKING CONN TO TOP PLATE BELOW [7, 8]	2x PLATE ATTACHMENT: NAILING TO WOOD RIM JOIST OR BLOCKING BELOW	SILL PLATE ATTACHMENT: ANCHOR BOLT TO CONCRETE BELOW [10]	SILL PLATE ATTACHMENT: SILL PLATE AT FOUNDATION [11]	SHEAR CAPACITY LBS/FT
W6	$\frac{15}{32}$"	0.131"øx$2\frac{1}{2}$" @ 6"OC	2x	CLIP @ 16"OC	0.148"øx$3\frac{1}{4}$" @ 8"OC	$\frac{5}{8}$"ø @ 48"OC	2x	240
W4	$\frac{15}{32}$"	0.131"øx$2\frac{1}{2}$" @ 4"OC	2x	CLIP @ 16"OC	0.148"øx$3\frac{1}{4}$" @ 4"OC	$\frac{5}{8}$"ø @ 48"OC	2x	350
W3	$\frac{15}{32}$"	0.131"øx$2\frac{1}{2}$" @ 3"OC STAGGERED	3x	CLIP @ 12"OC	0.148"øx$3\frac{1}{4}$" @ 4"OC	$\frac{5}{8}$"ø @ 32"OC	2x	455
W2	$\frac{15}{32}$"	0.131"øx$2\frac{1}{2}$" @ 2"OC STAGGERED	3x	CLIP @ 16"OC EACH SIDE	0.148"øx$3\frac{1}{4}$" @ 6"OC (2) ROWS [9]	$\frac{5}{8}$"ø @ 24"OC / $\frac{5}{8}$"ø @ 32"OC	2x / 3x [16]	595
2W4	$\frac{15}{32}$" BOTH SIDES	0.131"øx$2\frac{1}{2}$" @ 4"OC STAGGERED	3x	CLIP @ 16"OC EACH SIDE	0.148"øx$3\frac{1}{4}$" @ 4"OC (2) ROWS [9]	$\frac{5}{8}$"ø @ 24"OC	3x [16]	705
2W3	$\frac{15}{32}$" BOTH SIDES	0.131"øx$2\frac{1}{2}$" @ 3"OC STAGGERED	3x	CLIP @ 12"OC EACH SIDE	0.148"øx$3\frac{1}{4}$" @ 4"OC (2) ROWS [9]	$\frac{5}{8}$"ø @ 16"OC	3x [16]	910
2W2	$\frac{15}{32}$" BOTH SIDES	0.131"øx$2\frac{1}{2}$" @ 2"OC STAGGERED	3x	CLIP @ 8"OC EACH SIDE	0.148"øx$3\frac{1}{4}$" @ 3"OC (2) ROWS [9] OR (2) ROWS OF SDS$\frac{1}{4}$x5 SCREWS @ 6"OC [9]	$\frac{5}{8}$"ø @ 16"OC	3x [16]	1190

NOTES:

[1] INSTALL PANELS EITHER HORIZONTALLY OR VERTICALLY.

[2] WHERE SHEATHING IS APPLIED ON BOTH SIDES OF WALL, PANEL EDGE JOINTS ON 2x FRAMING SHALL BE STAGGERED SO THAT JOINTS ON THE OPPOSITE SIDES ARE NOT LOCATED ON THE SAME STUDS.

[3] BLOCKING IS REQUIRED AT ALL PANEL EDGES.

[4] PROVIDE SHEAR WALL SHEATHING AND NAILING FOR THE ENTIRE LENGTH OF THE WALLS INDICATED ON THE PLANS. ENDS OF FULL HEIGHT WALLS ARE DESIGNATED BY WINDOWS, OR DOORWAYS OR AS DESIGNATED ON PLANS. HOLD-DOWN REQUIREMENTS PER PLANS. (ALTERNATE NOTE: WALLS DESIGNATED AS PERFORATED SHEAR WALLS REQUIRE SHEATHING, SHEAR WALL NAILING, ETC. ABOVE AND BELOW ALL OPENINGS).

[5] SHEATHING EDGE NAILING IS REQUIRED AT ALL HOLD-DOWN POSTS. EDGE NAILING MAY ALSO BE REQUIRED TO EACH STUD USED IN BUILT-UP HOLD-DOWN POSTS. ADDITIONAL INFORMATION PER HOLD-DOWN DETAILS.

[6] INTERMEDIATE FRAMING TO BE 2x MINIMUM MEMBERS. ATTACH SHEATHING TO INTERMEDIATE FRAMING WITH 0.131"ø x $2\frac{1}{2}$" NAILS AT 12"OC WHERE STUDS ARE SPACED AT 16"OC AND 0.131"ø x $2\frac{1}{2}$" NAILS AT 6"OC WHERE STUDS ARE SPACED AT 24"OC.

[7] BASED ON 0.131"ø x $1\frac{1}{2}$" NAILS USED TO ATTACH FRAMING CLIPS DIRECTLY TO FRAMING. USE 0.131"ø x $2\frac{1}{2}$" NAILS WHERE INSTALLED OVER SHEATHING.

[8] FRAMING CLIPS: A35 OR LTP5 OR APPROVED EQUIVALENT.

[9] WHERE BOTTOM PLATE ATTACHMENT SPECIFIES (2) ROWS OF NAILS OR SCREWS, PROVIDE DOUBLE JOIST, RIM JOIST OR EQUAL BELOW. STAGGER NAILS/SCREWS IN ROWS $1\frac{1}{2}$" APART MINIMUM.

[10] ANCHOR BOLTS SHALL BE PROVIDED WITH HOT DIPPED GALVANIZED STEEL PLATE WASHERS 0.229"x3"x3" MIN. THE HOLE IN THE PLATE WASHER MAY BE DIAGONALLY SLOTTED $\frac{13}{16}$"x$1\frac{3}{4}$" PROVIDED A STANDARD CUT WASHER IS PLACED BETWEEN THE PLATE WASHER AND NUT. PLATE WASHER TO EXTEND TO WITHIN $\frac{1}{2}$" OF THE EDGE OF THE SILL PLATE ON THE SIDE(S) WITH SHEATHING. INCREASE PLATE WASHER SIZE AS REQUIRED. EMBED ANCHOR BOLTS 7" MINIMUM INTO THE CONCRETE.

[11] PRESSURE TREATED MATERIAL CAN CAUSE EXCESSIVE CORROSION IN THE FASTENERS. PROVIDE HOT-DIPPED GALVANIZED (ELECTRO-PLATING IS NOT ACCEPTABLE) NAILS AND CONNECTOR PLATES (FRAMING ANGLES, ETC.) FOR ALL CONNECTORS IN CONTACT WITH PRESSURE TREATED FRAMING MEMBERS. ADDITIONAL INFORMATION PER STRUCTURAL NOTES.

[12] $\frac{7}{16}$" APA-RATED SHEATHING (OSB) MAY BE USED IN PLACE OF $\frac{15}{32}$" SHEATHING PROVIDED THAT ALL STUDS ARE SPACED AT 16"OC MAXIMUM.

[13] WHERE WOOD SHEATHING (W) IS APPLIED OVER GYPSUM SHEATHING (G), CONTACT THE ENGINEER OF RECORD FOR ALTERNATE NAILING REQUIREMENTS.

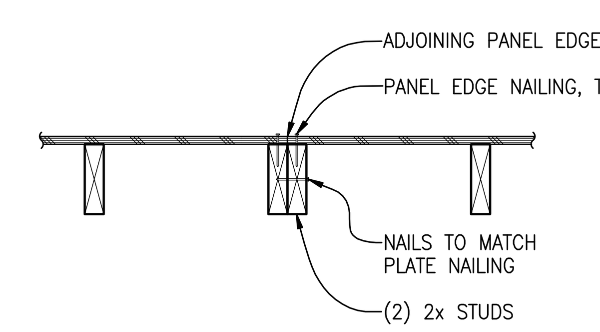
[14] AT ADJOINING PANEL EDGES, (2) 2x STUDS NAILED TOGETHER MAY BE USED IN PLACE OF SINGLE 3x STUD. DOUBLE 2x STUDS SHALL BE CONNECTED TOGETHER BY NAILING THE STUDS TOGETHER WITH 3" LONG NAILS OF THE SAME SPACING AND DIAMETER AS THE PLATE NAILING, PER SECTION.

[15] CONTACT THE STRUCTURAL ENGINEER OF RECORD FOR ADHESIVE OR EXPANSION BOLT ALTERNATIVES TO CAST-IN-PLACE ANCHOR BOLTS. SPECIAL INSPECTION MAY BE REQUIRED.

[16] NAIL STUDS TO 3x SILL PLATES WITH EITHER (2) 0.148"øx4" END NAILS OR (4) 0.131"øx$2\frac{1}{2}$" TOENAILS.

[17] WX WHERE "W" INDICATES WOOD SHEATHING AND "X" INDICATES EDGE NAIL SPACING.

[18] EDGE NAILS SHALL BE LOCATED $\frac{3}{8}$" FROM PANEL EDGES.



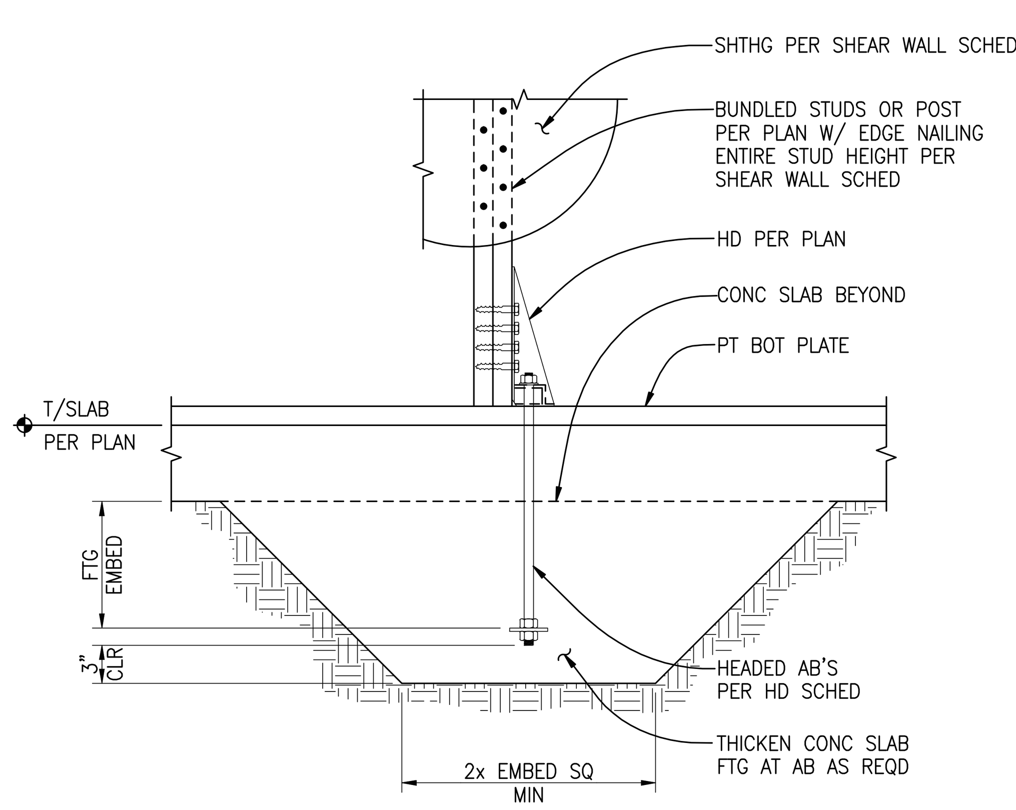
SECTION

HOLD-DOWN/STRAP SCHEDULE - HEM-FIR STUDS (6)

01420A SCALE: NONE

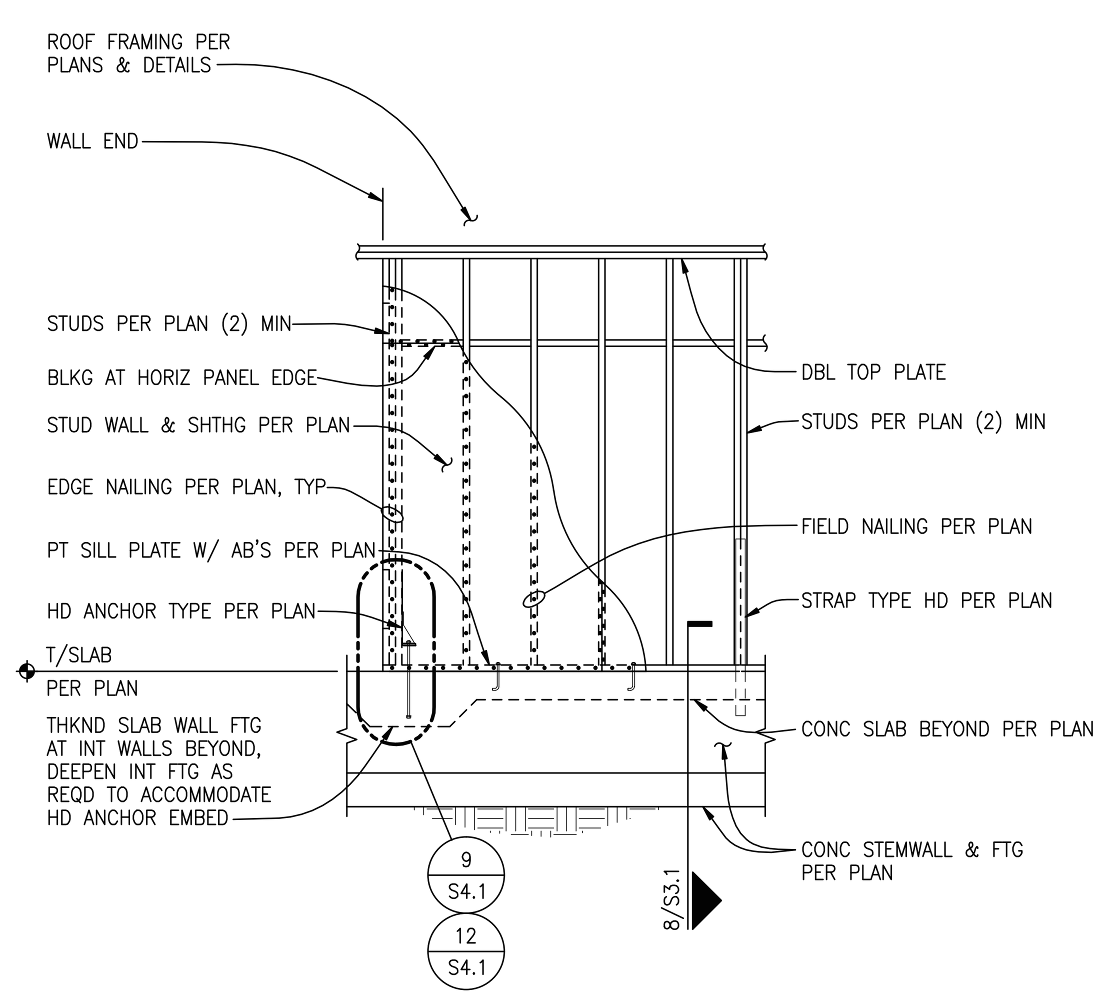
SHEAR WALL SCHEDULE - HEM-FIR (8)

01431 SCALE: NONE



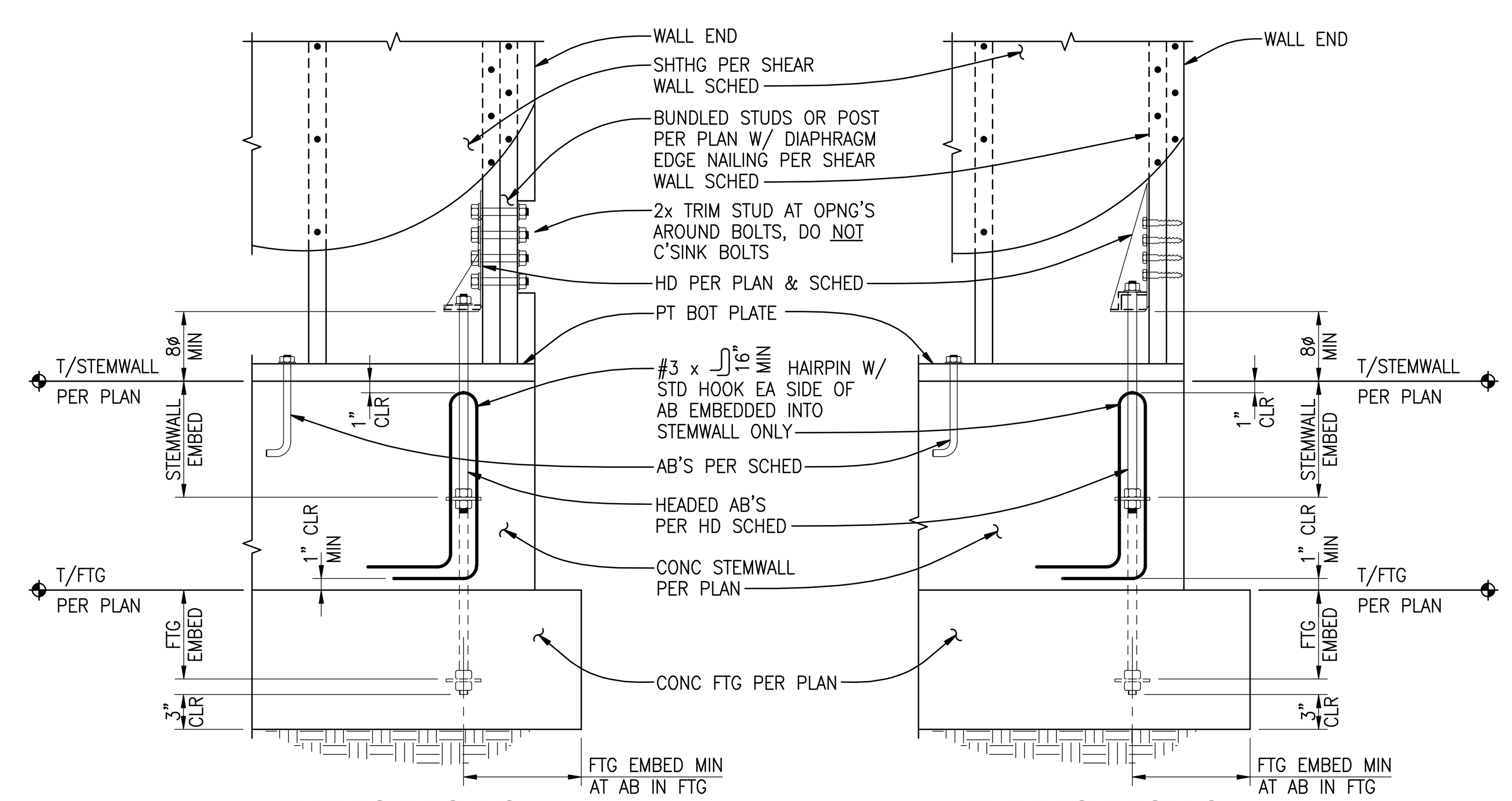
TYPICAL HOLD-DOWN AT THICKENED SLAB FOOTING (9)

06093M SCALE: 1"=1'-0"



TYPICAL SHEAR WALL ELEVATION (10)

06090M SCALE: NONE



AT HD HOLD-DOWNS

AT HDU HOLD-DOWNS

NOTES:

1. HAIRPINS NOT REQUIRED FOR ANCHORS EMBEDDED INTO FOOTING PER 6/S4.1.

2. MINIMUM FOOTING SIZE FOR ANCHORS EMBEDDED INTO FOOTING IS 2x EMBED SQUARE WITH DEPTH AS INDICATED.

TYPICAL HOLD-DOWN AT FOUNDATION - CONCRETE STEMWALL (12)

06091 SCALE: 1"=1'-0"

FOR PERMIT

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OFFICE BUILDING FOR DUDLEY SMILES

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ISSAQUAH WA 98027

No.	Date	Issue
	05.31.16	PERMIT SET

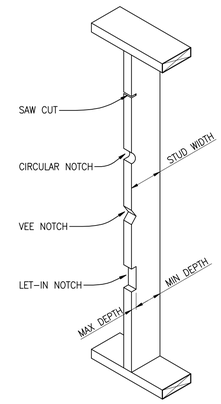
BRUCE YANG ZHONG — STATE OF WASHINGTON — 34493 — STRUCTURAL ENGINEER — PROFESSIONAL ENGINEER

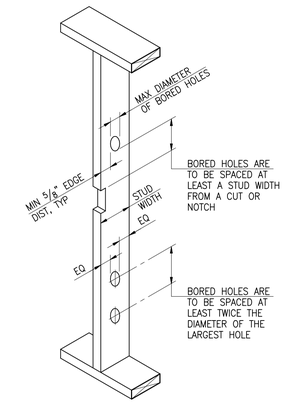
DCI Job #:16011-0074

STRUCTURAL WOOD STUD AND SHEAR WALL DETAILS

S4.1

Sheet





BEARING WALL STUDS		
STUD SIZE	MAX DEPTH OF EDGE CUT OR NOTCH	MIN DEPTH REMAINING AFTER CUT OR NOTCH
2x4	7/8"	2 5/8"
2x6	1 3/8"	4 1/8"

NON-BEARING WALL STUDS		
STUD SIZE	MAX DEPTH OF EDGE CUT OR NOTCH	MIN DEPTH REMAINING AFTER CUT OR NOTCH
2x4	1 3/8"	2 1/8"
2x6	2 3/16"	3 3/8"

CUTTING AND NOTCHING WOOD STUDS

NOTE:
DO NOT NOTCH MORE THAN THREE ADJACENT STUDS WITHOUT REVIEW BY ENGINEER.

BEARING WALL STUDS		
STUD SIZE	MAX DIAMETER OF BORED HOLE	MIN DEPTH REMAINING AFTER BORED HOLE
2x4	1 3/8"	5/8" EA SIDE OF HOLE
2x6	2 3/16"	5/8" EA SIDE OF HOLE

NOTE:
STUDS MAY NOT BE BORED IN EXCESS OF 40% OF THE STUD, IF STUDS ARE DOUBLED, BORINGS MAY BE INCREASED TO 60% OF STUD WIDTH PROVIDED NOT MORE THAN (2) SUCCESSIVE STUDS ARE BORED. BORINGS SHALL NOT BE MADE AT THE SAME SECTION WHERE CUT OR NOTCH HAS BEEN MADE.

NON-BEARING WALL STUDS		
STUD SIZE	MAX DIAMETER OF BORED HOLE	MIN DEPTH REMAINING AFTER BORED HOLE
2x4	2 1/16"	5/8" EA SIDE OF HOLE
2x6	3 1/4"	5/8" EA SIDE OF HOLE

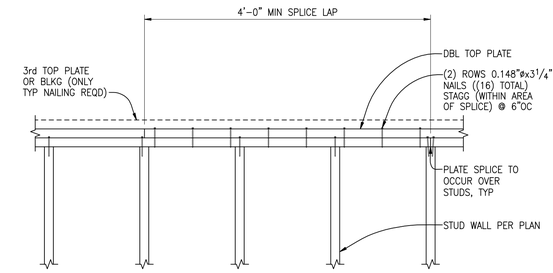
NOTE:
STUDS MAY NOT BE BORED IN EXCESS OF 60% OF THE STUD. BORINGS SHALL NOT BE MADE AT THE SAME SECTION WHERE CUT OR NOTCH HAS BEEN MADE.

BORED HOLES IN WOOD STUDS

NOTE:
BORED HOLE NOT PERMITTED IN MORE THAN THREE ADJACENT STUDS WITHOUT REVIEW BY ENGINEER.

TYPICAL HOLES AND NOTCHES IN WOOD STUDS

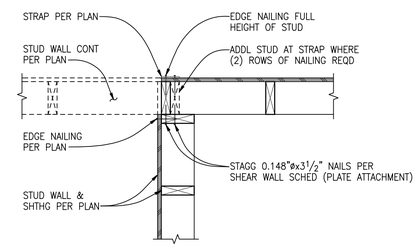
06908 SCALE: 1"=1'-0" **7**



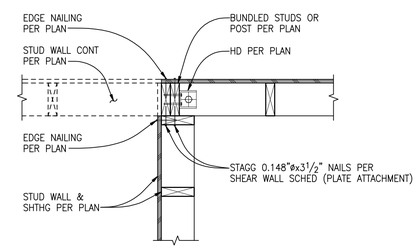
NOTE:
FLOOR/ROOF JOISTS NOT SHOWN FOR CLARITY.

TYPICAL PLATE SPLICE DETAIL

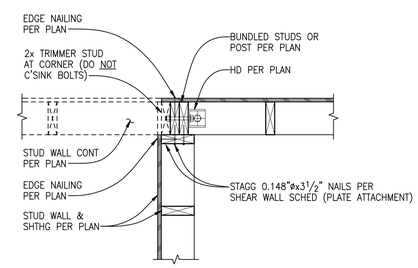
06904 SCALE: 1"=1'-0" **4**



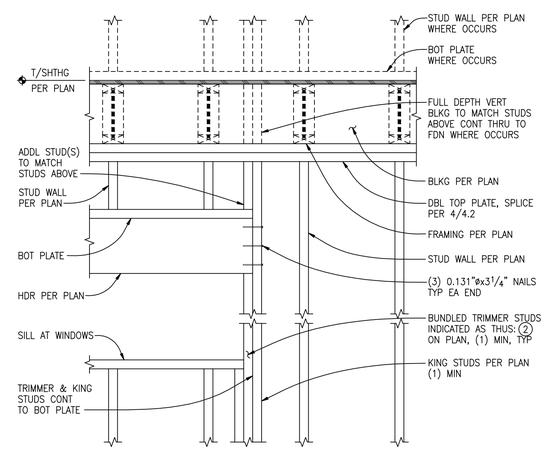
WITH OR WITHOUT STRAP TIE



HDU HOLD-DOWNS



HD HOLD-DOWNS



TYPICAL HEADER

06211 SCALE: 1"=1'-0" **11**

PLAN - INTERSECTING SHEAR WALLS

06110 SCALE: 1"=1'-0" **12**

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OFFICE BUILDING FOR DUDLEY SMILES

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ISSAQUAH WA
98027

No.	Date	Issue
	05.31.16	PERMIT SET

BRUCE YANG
STATE OF WASHINGTON
34493
STRUCTURAL ENGINEER
PROFESSIONAL ENGINEER

DCI Job #:16011-0074

STRUCTURAL WOOD STUD AND SHEAR WALL DETAILS

S4.2
Sheet

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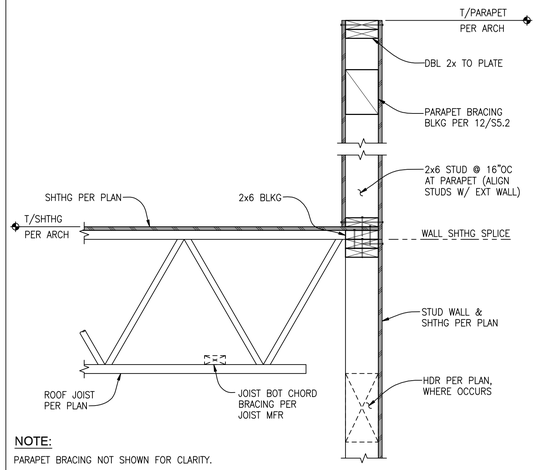
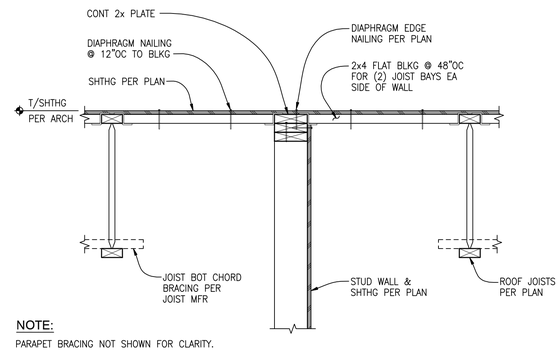


NOTE:
PARAPET BRACING NOT SHOWN FOR CLARITY.

EXTERIOR WALL PERPENDICULAR TO ROOF JOISTS (1)

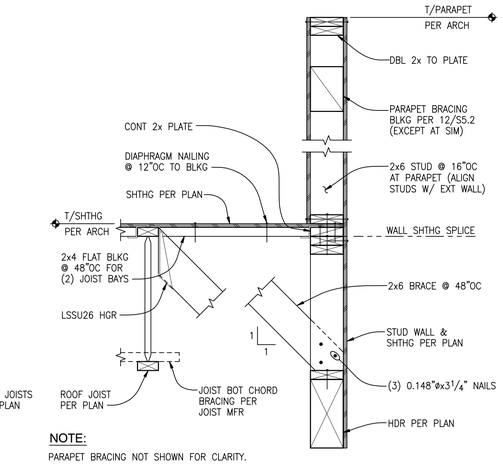
SCALE: 1"=1'-0"



NOTE:
PARAPET BRACING NOT SHOWN FOR CLARITY.

INTERIOR WALL PARALLEL TO ROOF JOISTS (3)

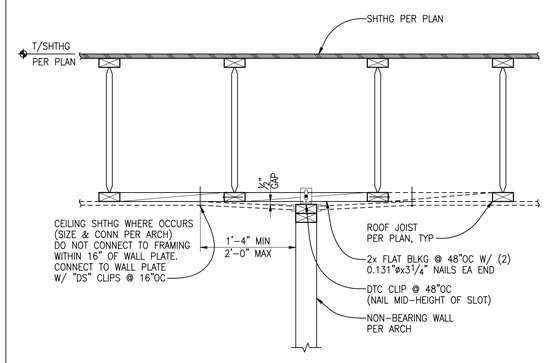
SCALE: 1"=1'-0"



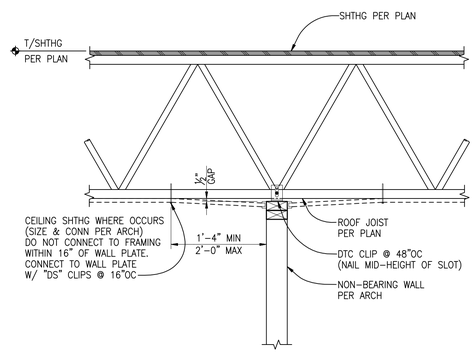
NOTE:
PARAPET BRACING NOT SHOWN FOR CLARITY.

EXTERIOR WALL PARALLEL TO ROOF JOISTS (4)

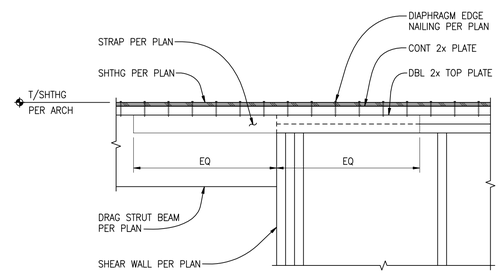
SCALE: 1"=1'-0"



OPTION - 1



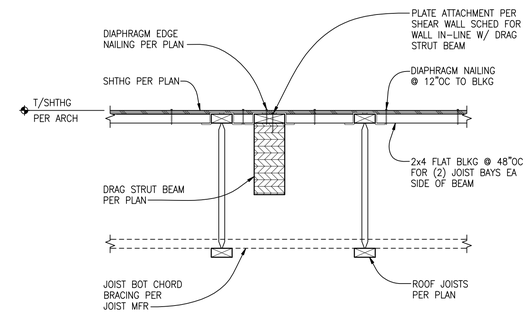
OPTION - 1



ELEVATION

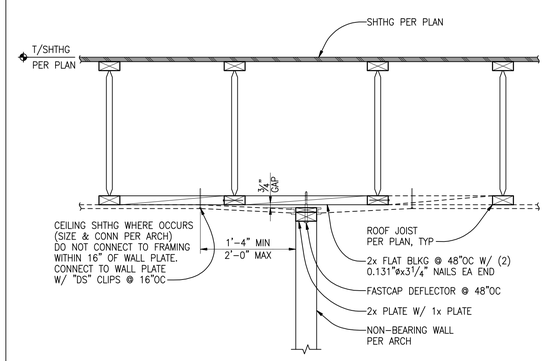
DRAG STRUT BEAM TO SHEAR WALL (7)

SCALE: 1"=1'-0"



SECTION AT DRAG STRUT BEAM PARALLEL TO JOISTS (8)

SCALE: 1"=1'-0"



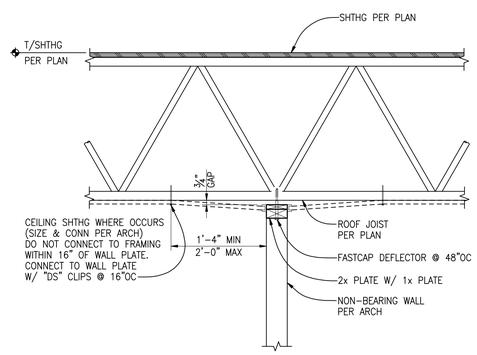
NOTE:
DOUBLE 2x TOP PLATES MAY BE USED
PROVIDED FASTCAP DEFLECTOR MAX IS
USED INSTEAD OF FASTCAP DEFLECTOR.

OPTION - 2

NON-STRUCTURAL PARTITION WALL PARALLEL TO ROOF FRAMING (9)

06905BM

SCALE: 1"=1'-0"



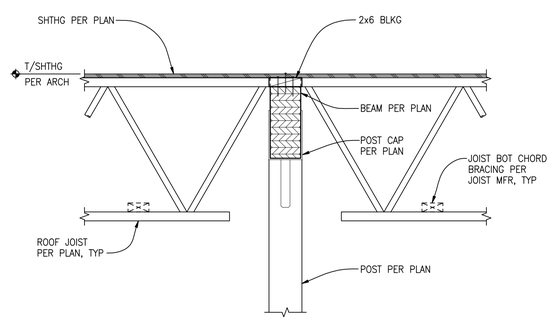
NOTE:
DOUBLE 2x TOP PLATES MAY BE USED
PROVIDED FASTCAP DEFLECTOR MAX IS
USED INSTEAD OF FASTCAP DEFLECTOR.

OPTION - 2

NON-STRUCTURAL PARTITION WALL PERPENDICULAR TO ROOF FRAMING (10)

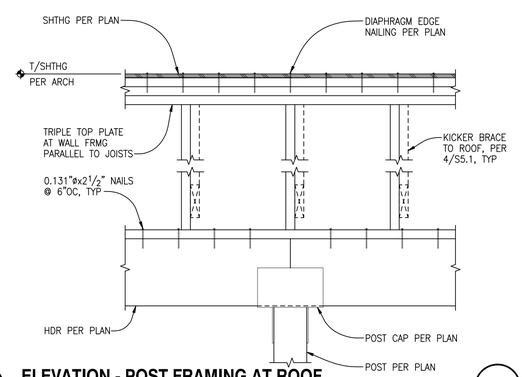
06905CM

SCALE: 1"=1'-0"



JOIST PERPENDICULAR TO BEAM (11)

SCALE: 1"=1'-0"



ELEVATION - POST FRAMING AT ROOF (12)

SCALE: 1"=1'-0"

FOR PERMIT

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CHRIS PARDO DESIGN
ELEMENTAL ARCHITECTURE

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OFFICE BUILDING FOR DUDLEY SMILES

5655 221ST PLACE SE
ISSAQUAH WA
98027

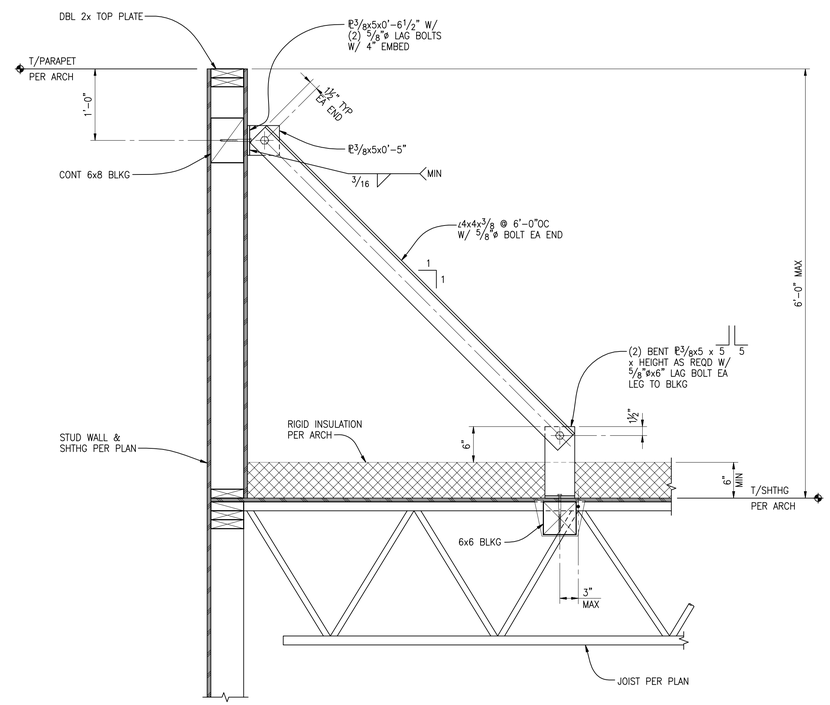
No.	Date	Issue
	05.31.16	PERMIT SET

BRUCE YANG ZHONG
STATE OF WASHINGTON
34493
PROFESSIONAL ENGINEER

DCI Job #:16011-0074

STRUCTURAL
ROOF FRAMING
DETAILS

S5.1
Sheet



SECTION AT PARAPET BRACE

SCALE: 1"=1'-0"

12

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ELEMENTAL ARCHITECTURE

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BRUCE YANG ZHONG
STATE OF WASHINGTON
34493
PROFESSIONAL ENGINEER

DCI Job #:16011-0074

STRUCTURAL
ROOF FRAMING
DETAILS

S5.2
Sheet

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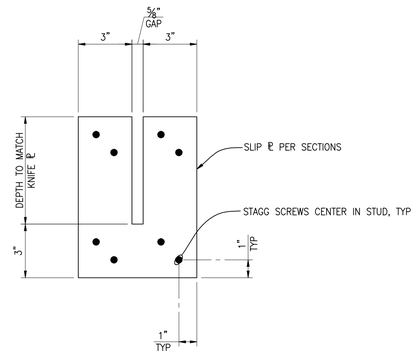
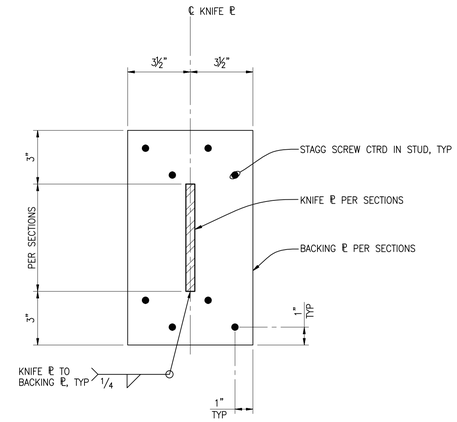


NOTE:

SLIP PLATE TO BE TIGHT AGAINST BOTTOM KNIFE PLATE.

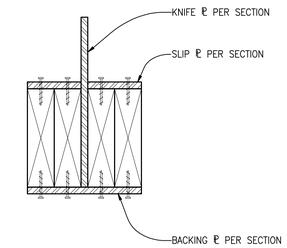
TYPICAL SLIP PLATE

SCALE: 3"=1'-0" (2)



TYPICAL BACKING PLATE

SCALE: 3"=1'-0" (3)

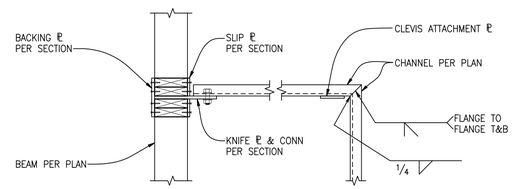


NOTE:

1. PROVIDE A35 CLIPS TOP AND BOTTOM, EACH SIDE OF STUD PACK.
2. SLIP PLATE TO BE TIGHT AGAINST BOTTOM OF KNIFE PLATE.

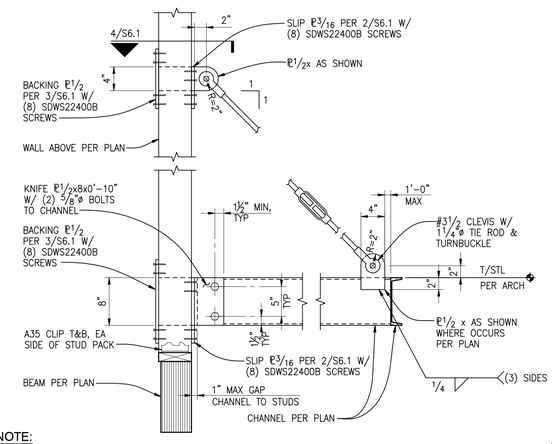
CLEVIS TO STUD CONNECTION

SCALE: 3"=1'-0" (4)



PLAN - CANOPY CORNER FRAMING

SCALE: 1"=1'-0" (6)

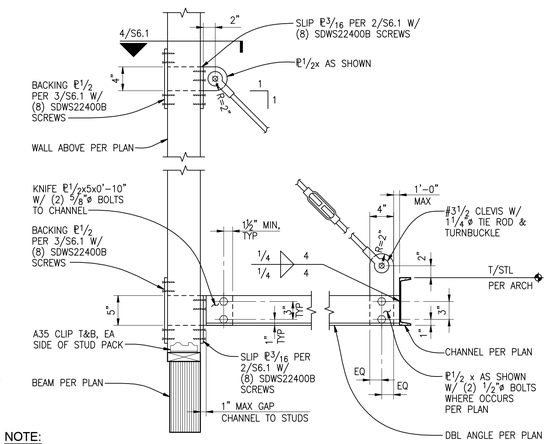


NOTE:

SLIP PLATES TO BE TIGHT AGAINST BOTTOM OF KNIFE PLATES.

CANOPY MOUNT SECTION

SCALE: 1"=1'-0" (7)

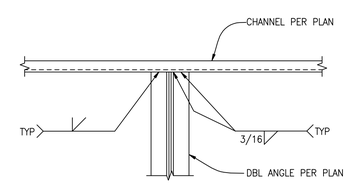


NOTE:

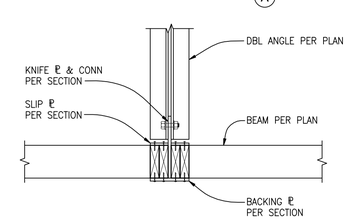
SLIP PLATES TO BE TIGHT AGAINST BOTTOM OF KNIFE PLATES.

CANOPY MOUNT SECTION AT DOUBLE ANGLE

SCALE: 1"=1'-0" (8)



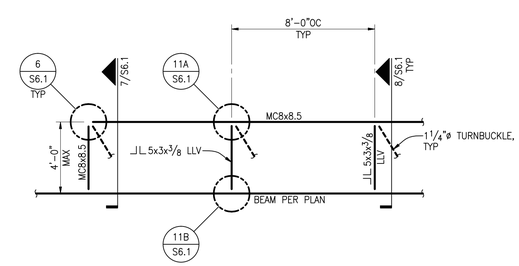
DOUBLE ANGLE CONNECTION (A)



DOUBLE ANGLE CONNECTION (B)

PLANS - CANOPY DOUBLE ANGLE CONNECTIONS

SCALE: 1"=1'-0" (11)



PLAN - CANOPY

SCALE: 1/4"=1'-0" (12)

FOR PERMIT

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OFFICE BUILDING FOR DUDLEY SMILES

5655 221ST PLACE SE
ISSAQUAH WA
98027

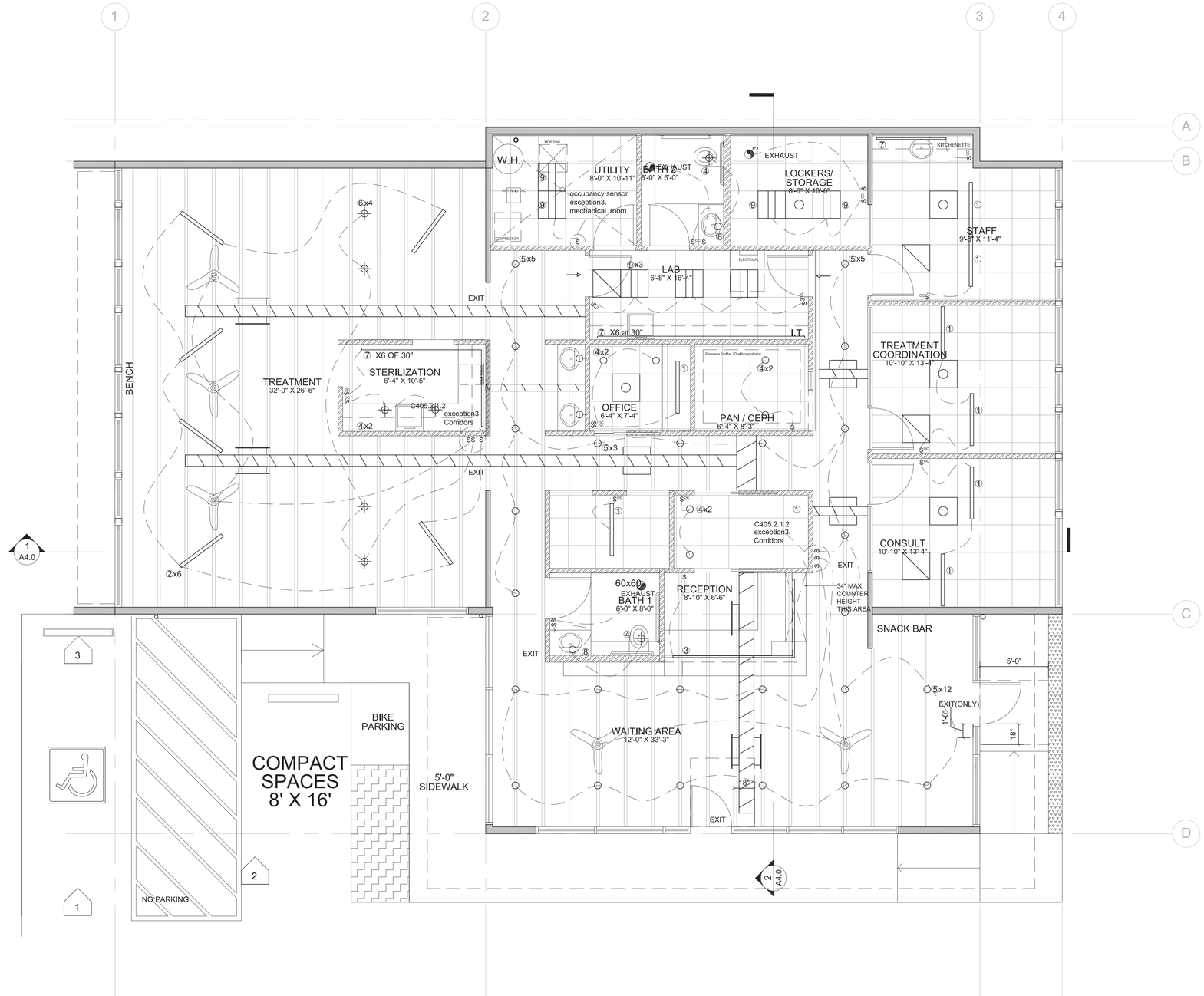
No.	Date	Issue
	05.31.16	PERMIT SET

BRIAN LANG THOMAS
STATE OF WASHINGTON
34493
PROFESSIONAL ENGINEER

DCI Job #:16011-0074

STRUCTURAL CANOPY FRAMING DETAILS

S6.1
Sheet



Lighting Fixture Schedule

1 - Fluorescent strip pendant – Amerlux, Linea 1.9", indirect, T5HO, 3000K

2 - Fluorescent strip pendant – Amerlux, Linea 1.9", direct, T5HO, 3000K

3 - Fluorescent strip pendant – Amerlux, Linea 1.9", direct / indirect, lens T5HO, 3000K, 8X4 "L" configuration

4 – Recessed can light – Juno, 4IN, APT1, miniature universal, white trim

5 – Surface mount cylinder – Indy, 4IN, LC4S, LED, 3000K, white

6 – Pendant mount cylinder – Indy, 4IN, LC4P, LED, 3000K, white

7 – Under-cabinet lights – Juno, Pro-series, UPLED, LED, 3000K, white, sized to suit continuous coverage of counter area

8 – Bath-bar – WAC, Brink LED, 36IN, 77636

9 – Utility fixture – Indy, S2X2BP, 2600lm, 2X2, basket perforated.

10 – Exit lights - Naviilte, NXPCL, led exit light w/emergency lighting, white

$	SWITCH
$OC	OCCUPANCY SENSOR SWITCH

Electrical Design Notes

1. C405.2.1.2 Light reduction controls. Each area that is required to have a manual control shall also allow the occupant to reduce the connected lighting load in a reasonably uniform illumination pattern by at least 50 percent. Lighting reduction shall be achieved by one of the following or other approved method:
   1. Controlling all lamps or luminaires;
   2. Dual switching of alternate rows of luminaires, alternate luminaires or alternate lamps;
   3. Switching the middle lamp luminaires independently of the outer lamps; or
   4. Switching each luminaire or each lamp.

   EXCEPTION:
   Light reduction controls need not be provided in the following areas and spaces:

   1. Areas that have only one luminaire, with rated power less than 100 watts.

   2. Areas that are controlled by an occupant-sensing device.

   3. Corridors, equipment rooms, storerooms, restrooms, public lobbies, electrical or mechanical rooms.

2. Exit signs (fixture 10) have integrated emergency lighting. to comply with C405.2.3

3. General contractor responsible for functional testing of automatic lighting controls.

Plan

SCALE: 1/4" = 1'-0"
2,943 S.F.

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4430 REGISTERED ARCHITECT
PETER DAVID GREAVES
STATE OF WASHINGTON

OFFICE BUILDING FOR DUDLEY SMILES

5655 221ST PLACE SE
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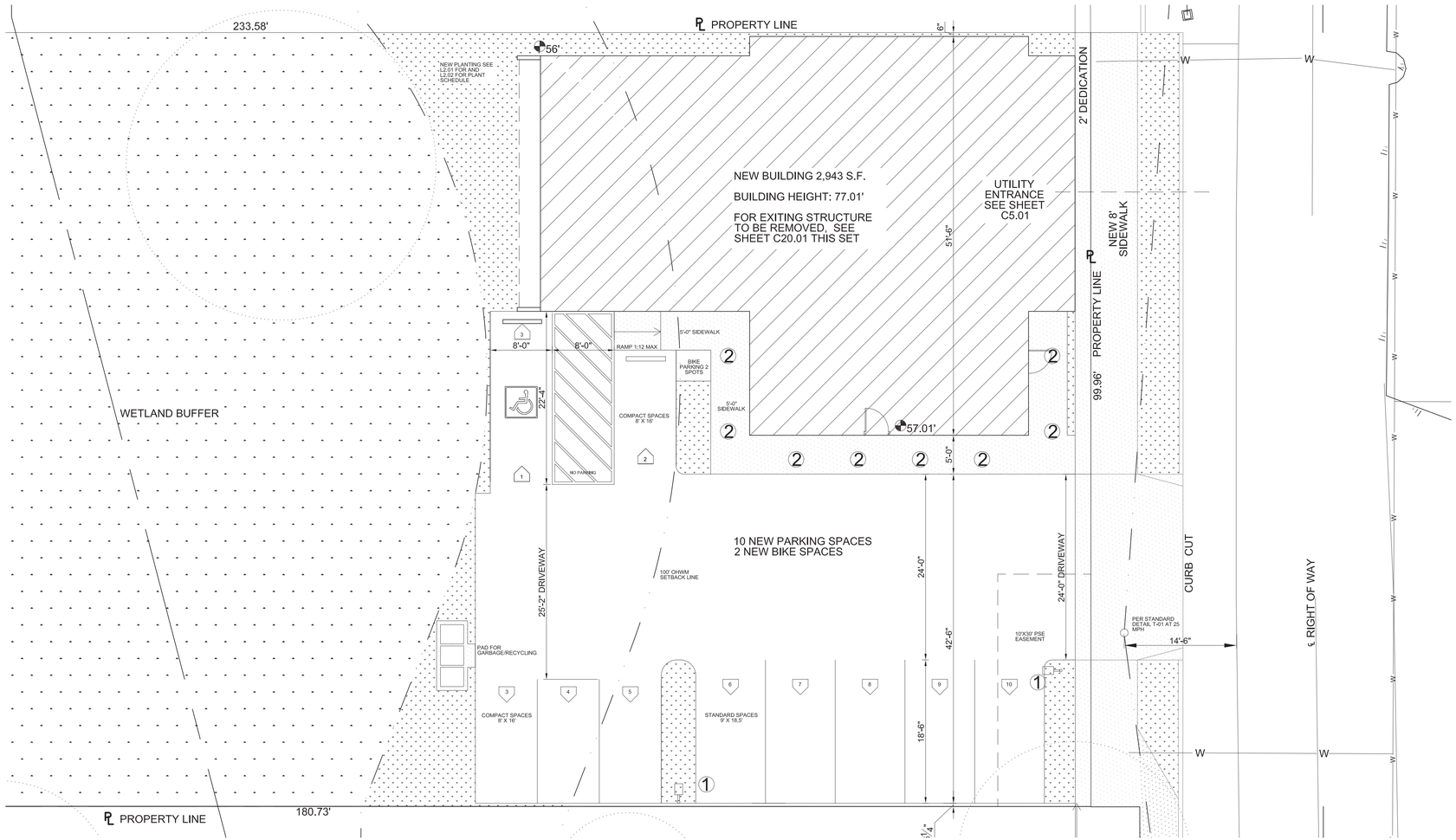
98027

No.	Date	Issue
1	06.01.16	Permit

LIGHTING PLAN

Job #: 127

E2.0
Sheet



Exterior Lighting Fixture Schedule

1 - Parking Lights, Philips Gardco P21 LED. Mount on 20' pole.
2 - Weather Tight Industrial Outdoor Sconce

NOTES

1.DAYLIGHT SENSOR MOUNTED ON FIXTURE FOR PARKING LIGHTS, AND BUILDING FOR CANOPY LIGHTING.

2. EXTERIOR LIGHTING ZONE 4 USED.

SITE LIGHTING PLAN

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PETER DAVID GEAVES
STATE OF WASHINGTON

OFFICE BUILDING FOR DUDLEY SMILES

5655 221ST PLACE SE
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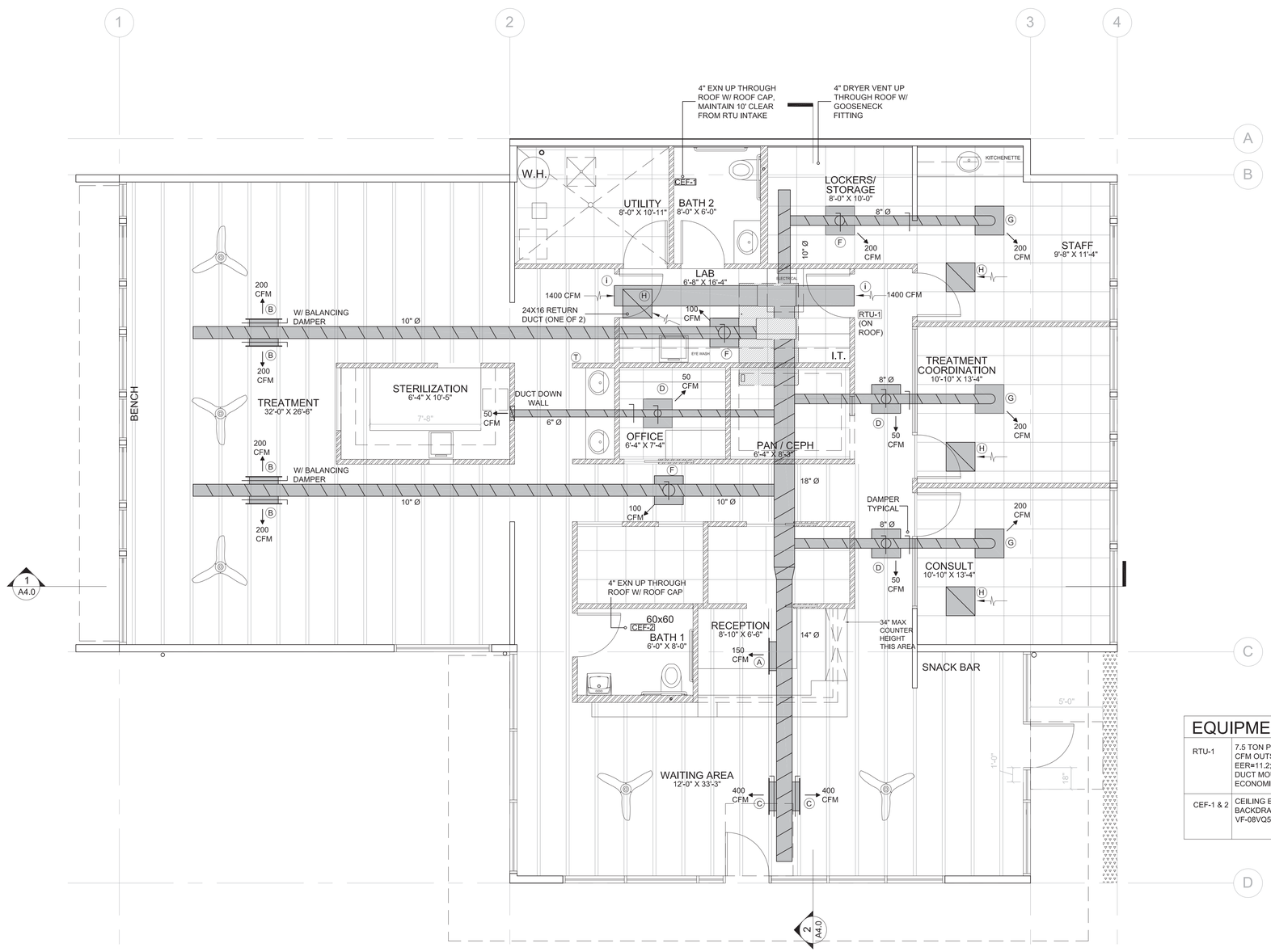
98027

No.	Date	Issue
1	06.01.16	Permit

SITE LIGHTING PLAN

Job #: 127

E2.1
Sheet



Mechanical Design Notes

1. ASSUME ROOFTOP CENTRAL UNIT WITH AIR CONDITIONING. SIZE ACCORDINGLY.

2. EXPOSED SUPPLY DUCT TO BE ROUND OR OVAL SPIRAL.

3. BRANCH LINES EITHER SPIRAL ROUND OR FABRICATED RECTANGLE.

4. NO TAPE ON JOINTS.

5. USE ALUMINUM GRILLES AND REGISTERS. COMMERCIAL STYLE, CLEAR ANODIZED FINISH. HART/COOLEY, TITUS, OR SIMILAR BRANDS.

6. BATHROOMS TO RECEIVE ELECTRIC WALL HEATER AND INDIVIDUAL EXHAUST FANS. EXHAUST FANS VENT THROUGH ROOF.

7. NO PENETRATIONS ALLOWED IN WALL (ON PROPERTY LINE).

8. PLEASE PROVIDE MECHANICAL PLANS AND SCHEDULES, AS REQUIRED BY THE CITY OF ISSAQUAH, FOR BUILDING PERMIT SUBMITTAL DOCUMENT.

9. DUCTS TO BE CONSTRUCTED W/ RIGID 22 GA GALVANIZED SHEETMETAL IN ACCORDANCE W/ SMACNA FOR LOW PRESSURE DUCT. DUCTS TO BE SEALED PER SMACNA STANDARDS. INSULATION PER WSEC WHERE REQUIRED.

10. THERMOSTAT TO BE 7-DAY PROGRAMMABLE WITH MANUAL OVERRIDE AND 5° F DEADBAND FOR SYSTEM CONTROLLABILITY.

11. BALANCING DAMPER

DIFFUSER SCHEDULE

A	8X6 SIDEWALL REGISTER.	150 CFM (SG)
B	10X8 SIDEWALL REGISTER.	200 CFM (SG)
C	12X10 SIDEWALL REGISTER,	400 CFM (SG)
D	6" Ø SUPPLY DIFFUSER,	50 CFM (SD)
E	6" Ø SUPPLY DIFFUSER,	80 CFM (SD)
F	6" Ø SUPPLY DIFFUSER,	100 CFM (SD)
G	8" Ø SUPPLY DIFFUSER,	200 CFM (SD)
H	24X24 RETURN GRILL W/ 90°ELBOW (RG)	
i	24X16 RETURN GRILL	1400 CFM (RG)

EQUIPMENT SCHEDULE

RTU-1	7.5 TON PACKAGED GAS FIRED ROOFTOP UNIT; 2800 CFM AIRFLOW; 400 CFM OUTSIDE AIR; TOTAL COOOLING CAP; 120 MBH GAS INPUT; EER=11.2; 208/3/60; MCA= 39.3 A. MOCP=50 A; 847 LBS; SEISMIC CURB; DUCT MOUNTED SMOKE DETECTOR; CONTROL WITH THERMOSTAT; ECONOMIZER; TRANE YSC092 OR EQUAL
CEF-1 & 2	CEILING EXHAUST FAN; 80 CFM @ .25" ESP; 115/1/60; 14.5 WATTS; BACKDRAFT DAMPER; CONTROL W/ WALL SWITCH; PANASONIC VF-08VQ5 OR EQUAL

VENTILATION SCHEDULE

CONSULT/TREATMENT/OFFICES/STAFF/LAB:
1485 SQ FT, 200 SQFT/PER: 21 PEOPLE x 5 CFM/P + 0.06 CFM/SQ FT=
194 CFM /0.8 EF= 242 CFM
WAITING/RECEPT:
560 SQ FT, 30 SQ FT/P, 17 PEOPLE x 5 CFM/P + 0.06 CFM/SQ FT= 119 CFM / 0.8 EFF- 148 CFM
TOTAL: 242 + 148= 390 CFM OUTSIDE AIR

Plan

SCALE: 1/4" = 1'-0"
2,943 S.F.

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ROBERT N. RUSSELL
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44808
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OFFICE BUILDING FOR DUDLEY SMILES

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ISSAQUAH WA
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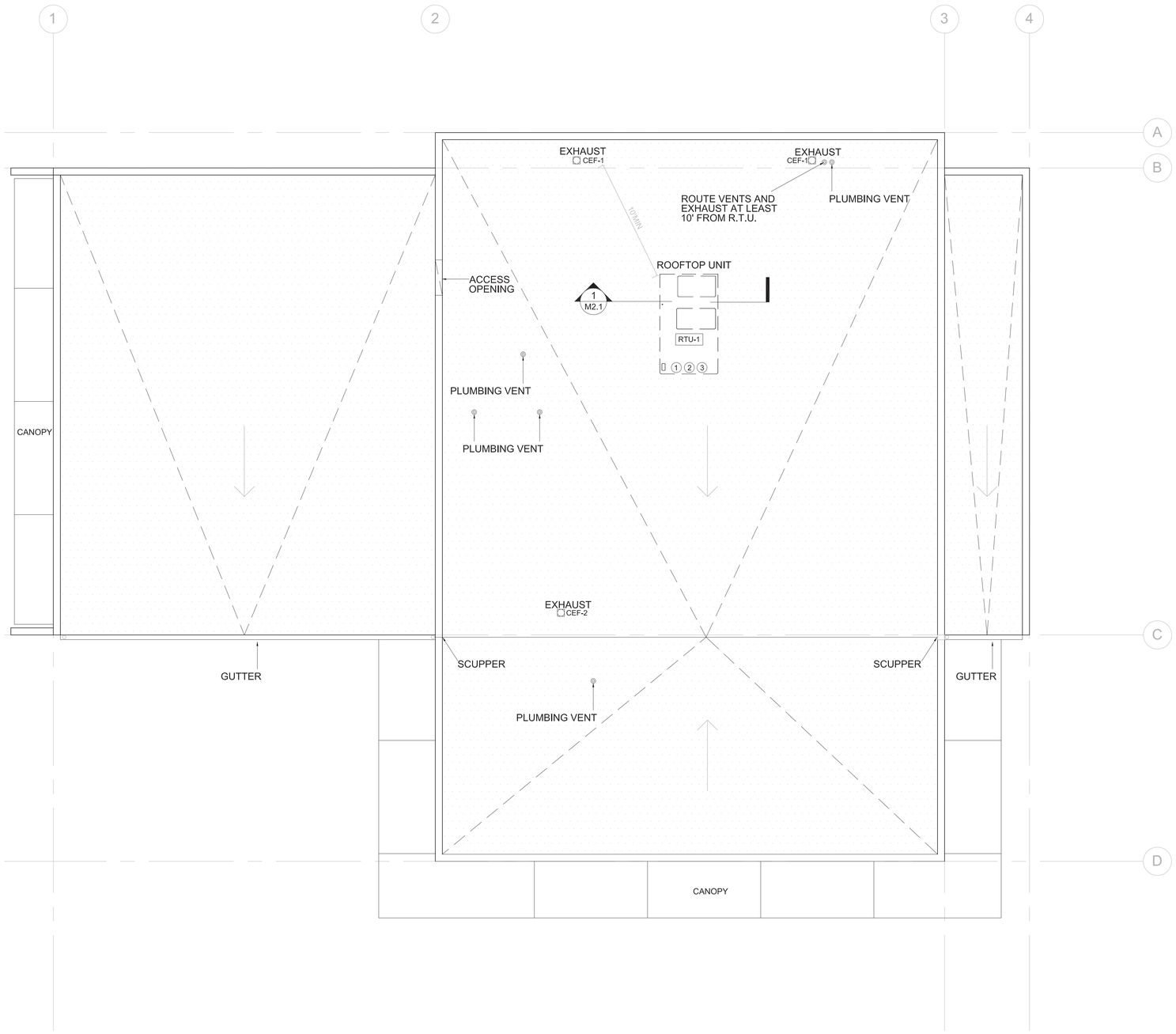
No.	Date	Issue
1	06.01.16	Permit

MECHANICAL PLAN

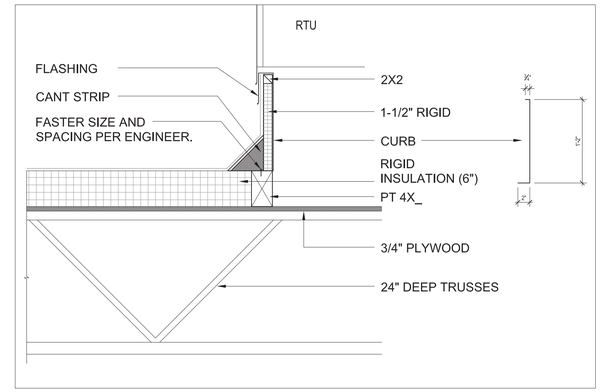
Job #: 127

M2.0
Sheet



Roof Plan

SCALE: 1/4" = 1'-0"
2,943 S.F.



DETAIL 1- R.T.U. CURB

SCALE: 1/2" = 1'-0"

Mechanical Notes

1. PER IMC SEC. 306.5, ROOFS UNDER 16' DO NOT REQUIRE PERMANENT ROOF ACCESS.

2. AN ACCESSIBLE GAS SHUT-OFF VALVE WILL BE INSTALLED WITHIN 6' OF ALL GAS APPLIANCES. INTERNATIONAL FUEL GAS CODE SEC 409.5

3. A 120-VOLT RECEPTACLE SHALL BE SHOWN WITHIN 25' OF EACH PIECE OF EQUIPMENT. ICC ELECTRICAL CODE.

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Sheet

GENERAL NOTES

1. ALL WORK SHALL BE PERFORMED BY A LICENSED CONTRACTOR. CONTRACTOR SHALL INSTALL SYSTEMS, EQUIPMENT AND COMPONENTS IN ACCORDANCE WITH MINIMUM REQUIREMENTS SHOWN IN THESE PLANS. ANY DEVIATION FROM THE DESIGN PLANS SHALL ONLY BE PERFORMED IF APPROVED BY THE OWNER REPRESENTATIVE OR DESIGN ENGINEER. ALL WORK SHALL MEET OR EXCEED THE MINIMUM REQUIREMENTS OF ALL APPLICABLE CODES AND STANDARDS. HOWEVER, ANY DEVIATION FROM THE DESIGN PLANS IMPLIED BY LOCAL CODES THAT SUGGESTS INSTALLATION OF LESS THAN THE REQUIREMENTS SPECIFIED IN THESE DESIGN PLANS SHALL NOT BE ALLOWED WITHOUT APPROVAL BY THE OWNER REPRESENTATIVE OR THE DESIGN ENGINEER.
2. PLUMBING CONTRACTOR IS RESPONSIBLE TO ENSURE THAT ITEMS TO BE FURNISHED UNDER PLUMBING CONTRACT WILL FIT THE SPACE AVAILABLE. CONTRACTOR SHALL MAKE NECESSARY FIELD MEASUREMENTS TO ASCERTAIN SPACE REQUIREMENTS, INCLUDING THOSE FOR CONNECTIONS AND SHALL FURNISH AND INSTALL SUCH SIZES AND SHAPES OF EQUIPMENT THAT ARE THE TRUE INTENT OF THE DRAWINGS AND SPECIFICATIONS.
3. GENERAL CONTRACTOR SHALL PROVIDE ALL OPENINGS IN WALLS, FLOORS AND ROOFS WITH EACH CONTRACTOR RESPONSIBLE FOR VERIFYING LOCATION AND SIZES OF ALL OPENINGS REQUIRED UNDER HIS CONTRACT, UNLESS NOTED OTHERWISE ON THE PLANS.
4. PLUMBING CONTRACTOR SHALL COORDINATE ALL WORK WITH OTHER TRADES INVOLVED PRIOR TO INSTALLATION OF PLUMBING EQUIPMENT, SO AS TO AVOID CONFLICTS DURING CONSTRUCTION.
5. COORDINATE WITH STRUCTURAL FOR EXACT LOCATION OF ALL STRUCTURAL FRAMING AND FOOTINGS AND FINALIZE THE EXACT ROUTING OF ALL PIPES WITH STRUCTURAL AND AT SITE PRIOR AND DURING THE CONSTRUCTION.
6. ALL INDIRECT WASTE OUTLETS TERMINATING AT FLOOR DRAINS AND FLOOR SINKS SHALL HAVE 2" AIR GAP (MIN.) OR TWICE THE EFFECTIVE DRAIN DIAMETER WHICHEVER IS LARGER. ALL INDIRECT WASTE PIPES PASSING THROUGH FLOOR SLAB OR WALLS SHALL BE INSTALLED WITH FOAM RUBBER INSULATION.
7. PLUMBING CONTRACTOR SHALL EXCLUDE ALL WORK SO THAT IT PROCEEDS WITH A MINIMAL OF INTERFERENCE WITH OTHER TRADES.
8. VERIFY EXACT ROUGH-IN AND FINAL EQUIPMENT REQUIREMENTS WITH ROUGH-IN DRAWINGS PROVIDED
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL FINAL CONNECTIONS TO THE PLUMBING FIXTURES AND KITCHEN EQUIPMENT. THIS INCLUDES, BUT IS NOT LIMITED TO, FURNISHING
10. THE CONTRACTOR SHALL VERIFY THAT ALL PIPING, AS SHOWN ON THESE DRAWINGS WILL NOT CONFLICT WITH ANY DRAINS, SCUTTLES, JOINTS, VENTS, EQUIPMENT, ECT.
11. COORDINATE ROUTING AND LOCATIONS OF WASTE AND VENT PIPING WITH ALL OTHER TRADES.
12. THE PLUMBING CONTRACTOR SHALL COORDINATE WITH THE GENERAL CONTRACTOR AND OTHER TRADES, ALL REQUIRED OPENINGS AND EXCAVATIONS. ALL REQUIRED OPENINGS IN FOUNDATIONS, FLOORS, WALLS, AND ROOFS SHALL BE DESIGNED INTO THE STRUCTURE INITIALLY BY THE USE OF SLEEVES, CURBS, ECT. CUTTING AND PATCHING SHALL BE HELD TO A MINIMUM.
13. ALL ITEMS PROJECTING THROUGH THE ROOF SHALL BE FLASHED A MINIMUM OF 12" ABOVE THE ROOF. ALL VENTS SHALL BE A MINIMUM OF 10' FROM AND OUTSIDE AIR INTAKE.
14. ALL FLOOR DRAINS ARE TO HAVE 6" DEEP SEAL TRAPS.
15. INSULATE WATER SUPPLY AND WASTE PIPING UNDER HANDICAPPED LAVATORIES WITH "HANDI-LAV GUARD" JACKET BY TRUEBRO.
16. INSULATE ALL COPPER DRAIN LINES FROM DRAIN BINS WITH 1/2" THICK "ARMAFLEX" INSULATION.
17. PROVIDE DI-ELETRIC COUPLINGS AT ALL DISSIMILAR METAL PIPE CONNECTIONS.
18. CONTRACTOR SHALL FURNISH AND INSTALL ALL CONDENSATE DRAIN PIPING AND FITTINGS. INSULATE ALL CONDENSATE DRAIN PIPING AND FITTINGS INSIDE THE BUILDING WITH 1/2" "ARMAFLEX" PIPE INSULATION.
19. ALL WATER LINES INSTALLED IN EXTERIOR WALLS SHALL BE INSTALLED INSIDE OF WALL INSULATION AND INSULATED INDIVIDUALLY TO PROTECT FROM FREEZING.
20. COORDINATE ROUTING AND LOCATION OF PIPING WITH DUCTWORK, LIGHTS, AND STRUCTURE. PIPING SHALL RISE, JOG OR OFFSET AS REQUIRED TO AVOID CONFLICTS. MODIFICATION OF INSTALLED PIPING TO RESOLVE CONFLICTS ARISING FROM LACK OF COORDINATION SHALL BE DONE BY THE P.C. AT NO EXPENSE TO THE OWNER.
21. P.C. TO SEAL ALL PLUMBING PENETRATING THRU DRAFT STOPPING ABOVE THE CEILING.
22. P.C. TO INSTALL SHUT-OFF VALVES WITH COMPRESSION FITTINGS ON ALL WATER SUPPLY AT ALL FIXTURES.
23. SELF-DIPENSING, SENSOR, OR METERING FAUCETS MUST PROVIDE A FLOW OF WATER FOR AT LEAST FIFTEEN SECONDS WITHOUT THE NEED TO REACTIVATE.

PLUMBING FIXTURE CONNECTION SCHEDULE

DESIGNATION:	ITEM:	TRAP:	WASTE:	VENT:	CW:	HW:
P1 / P1A	WATER CLOSET (FT)	3"	4"	2"	½"	–
P2 / P2A	LAVATORY	1½"	1½"	1½"	½"	½"
P3	LAB SINK	1½"	2"	1½"	½"	½"
P3A	LAB SINK'S EYE WASH	1½"	2"	1½"	½"	½"
P4	STERILE SINK	1½"	2"	1½"	½"	½"
P5	BREAK ROOM LOUNGE SINK	1½"	2"	1½"	½"	½"
P6	HALL SINK	1½"	2"	1½"	½"	½"
P7	CLOTHES WASHER	2"	2"	1½"	½"	½"
FD1	FLOOR DRAIN	2"	2"	1½"	–	–
FS1	FLOOR SINK	3"	3"	1½"	–	–

NOTES:
(1) SEE PLUMBING FIXTURE SCHEDULE.
(2) ALL HANDICAPPED FIXTURES SHALL BE APPROVED FOR USE BY DISABLED PERSONS.
(3) ALL FIXTURES SHALL COMPLY WITH LOCAL WATER CONSERVATION ACT REQUIREMENTS.
(4) PROVIDE TRAP PRIMER TO ALL FLOOR DRAINS.
(5) NO UNDERGROUND WASTE PIPING LESS THAN 2".

H.W. CIRCULATING PUMP SCHEDULE

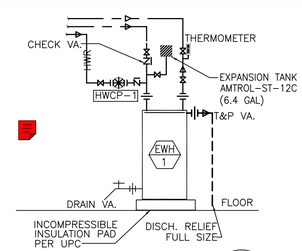
DESIGNATION:	HWCP-1
ZONE:	TENANT SPACE
MANUFACTURER:	GRUNDFOS
MODEL:	UP-15-10-TLC
TYPE:	INLINE
G.P.M.:	2
HEAD (FT-H20):	4.3'
RPM:	–
MOTOR:	3-SPEED
VOLTAGE:	115
PHASE:	1
WEIGHT (LBS):	–
REMARKS:	(1)

(1) ALL BRONZE PUMP WITH 3-SPEEDS & PROGRAMMABLE TIME CLOCK.

PLUMBING LEGEND

SYMBOL	DESCRIPTION
CW	COLD WATER PIPE
HW	HOT WATER PIPE
W	WASTE/SOIL PIPE
V	VENT PIPE
G	GAS PIPE
RL	RAIN LEADER PIPE
P1	PLUMBING FIXTURE TAG
1	PLAN NOTE #1
WH-1	WH #1 (EQUIP. TAG)
WCO	WALL CLEANOUT
0.5"	1/2" PIPE SIZE
0.75"	3/4" PIPE SIZE
1"	1" PIPE SIZE
1.25"	1-1/4" PIPE SIZE
1.5"	1-1/2" PIPE SIZE
2"	2" PIPE SIZE
2.5"	2-1/2" PIPE SIZE
3"	3" PIPE SIZE
	PIPE ELBOW UP
	PIPE ELBOW DOWN
	PIPE TEE UP
	PIPE TEE DOWN

SYMBOL	DESCRIPTION
	COLD WATER
FW	FILTERED WATER
	HOT WATER
	VENT
	WASTE, SANITARY
GW	WASTE, GREASE
RL	RAIN LEADER
A	AIR
V	VACUUM
	GATE VALVE
	BALANCING/SHUT-OFF VALVE
	BALL VALVE
	PRESSURE GAUGE
	UNION
VTR	VENT THRU ROOF
	BURIED PIPE
	HOSE BIBB (WALL HYDRANT)
FS	FLOOR SINK
FD	FLOOR DRAIN
FCO	FLOOR CLEANOUT



WATER HEATER DETAIL 1 P1.0
NO SCALE

FIXTURE SCHEDULE (NOTE: COORDINATE WITH ARCHITECTURAL)

TAG	ITEM	QUANTITY	MANUFACTURER	NAME	MODEL	SIZE/FLOW	FINISH	NOTES
FX-1	DENTAL CABINET	6	ROSS ORTHODONTIC		PROTEGE			
FX-2	HAND WASHING SINK	4	BRYANT		K-2699-4-0		WHITE	4" CENTER SET
	FAUCET FOR ABOVE		KOHLER	CORALAIS	K-15199-4NDRA-CP	0.5-gpm	POLISHED CHROME	
FX-3	STERILIZATION SINK	1	ELKAY	NEPTUNE	HD114559		STAINLESS	SINGLE BOWL, TOP MOUNT, 25X22X8-1/8
	FAUCET FOR ABOVE		CHICAGO		1100-G2AE35-317VAB	1.5-gpm	CHROME	4" WRISTBLADE HANDLE, 5-1/4" RIGID / SWING GOOSENECK SPOUT
FX-4	LAB SINK	1	ELKAY	NEPTUNE	HD114559		STAINLESS	SINGLE BOWL, TOP MOUNT, 25X22X8-1/8
	FAUCET FOR ABOVE		CHICAGO		1100-G2AE35-317VAB	1.5-gpm	CHROME	4" WRISTBLADE HANDLE, 5-1/4" RIGID / SWING GOOSENECK SPOUT
FX-5	GAS HOT WATER HEATER	1						
FX-6	MOP SINK	1	MUSTEE		63M	24X24X10	WHITE	DRAIN TO SUIT
	FAUCET FOR ABOVE		CHICAGO		897-RCF			WALL MOUNT LEVER
FX-7	WET RING VAC	1	MIDMARK		CV3R	SEE NOTES		1" VAC LINE, 1/2" WATER CONNECTION, 1" DRAIN CONNECTION
FX-8	COMPRESSOR	1	MIDMARK		P21	SEE NOTES		5.2 CFM AT 80 PSI, 1.5 HP,
FX-9	WALL MOUNT BATHROOM SINK	2	KOHLER	PINOIR	K 2035-1-0		WHITE	SINGLE HOLE, ADA
	FAUCET FOR ABOVE		KOHLER	CORALAIS	K-15199-4NDRA-CP	0.5-gpm	POLISHED CHROME	
FX-10	W.C.	2	KOHLER	WELLWORTH	K-3575-PA-0	1.28 GPF	WHITE	TWO PIECE, ELONGATED
FX-11	COFFEE MAKER	1	KEURIG	COMMECIAL				ATTACHED TO WATER SUPPLY
FX-12	WASHING MACHINE	1						ROUGH-IN ONLY
FX-13	HOSE BIB	1						
FX-14	KITCHENETTE SINK	1	ELKAY	NEPTUNE	HD114559		STAINLESS	SINGLE BOWL, TOP MOUNT, 25X22X8-1/8
	FAUCET FOR ABOVE	1	CHICAGO		1100-G2AE35-317VAB	1.5-gpm	CHROME	4" WRISTBLADE HANDLE, 5-1/4" RIGID / SWING GOOSENECK SPOUT
FX-15	REFRIGERATOR/ICEMAKER	1	GE	NEPTUNE	GIE18ETHWW	18.2 CU FT	WHITE	TOP FREEZER ICE MAKER
FX-16	DENTAL CHAIR (NO CAB.)	2	ROSS ORTHODONTIC					
FX-17	BOTTLE FILLER	1	ELKAY		EMASM EZH20	1-gpm	STAINLESS & PLASTIC	UNFILTERED, PROVIDE BUILDING FILTRATION SYSTEM

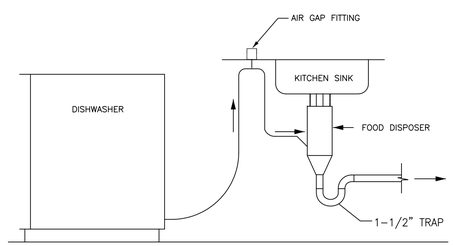
GENERAL PLUMBING NOTES

1. SEE ARCHITECTURAL PLANS FOR EXACT LOCATION AND QUANTITIES OF ALL THE PLUMBING FIXTURES AND DIFFERENT TYPES.
2. SEE ARCHITECTURAL PLANS TO DETERMINE EXACT CONFIGURATION AND ORIENTATION OF EACH FIXTURE.
3. ALL FIXTURES SHALL MEET THE STATE WATER CONVERSATION ACT REQUIREMENTS.
4. EXPOSED PIPES FOR HANDICAPPED LAVATORIES SHALL HAVE INSULATION JACKETS (HANDI-LAV-GUARD OR EQUAL). OFFSET EXPOSED P-TRAPS FOR CLEARANCE FOR HANDICAPPED ACCESS.
5. ALL FIXTURES SHALL INCLUDE ALL ACCESSORIES FOR A COMPLETE INSTALLATION INCLUDING BUT NOT LIMITED TO ALL STRAINERS, POP-UP DRAINS AND STOPS, WING NUTS, ETC.
6. ALL EXPOSED P-TRAPS SHALL BE CHROME.
7. PROVIDE DEEP SEAL TRAPS ON ALL FIXTURES THAT ARE NOT INTERNALLY TRAPPED.
8. SUBMIT ALL PLUMBING SPECIFICATIONS FOR APPROVAL BY DESIGNER. QUANTITIES ARE FOR THE CONTRACTOR'S CONVENIENCE ONLY. VERIFY ALL COUNTS.
9. PLUMBING FIXTURES TO COMPLY WITH REGULATIONS FOR BARRIER-FREE FACILITIES WHEN APPLICABLE. ADA RESTROOMS TO HAVE ALL EXPOSED PLUMBING PIPES AND DRAINS INSULATED.
10. PLUMBER TO PROVIDE HOT AND COLD WATER TO ALL SINK LOCATIONS.
11. PROVIDE WATER LINE TO REFRIGERATOR WATER DISPENSER AND/OR ICE MAKER, AND COMMERCIAL COFFEE MAKERS WHEN APPLICABLE. CONFIRM WITH CLIENT.
12. WHEN WASHER/DRYER IS INSTALLED, PROVIDE PLUMBING WITH VALVE BOX..
13. WATER HEATER PROVIDED & INSTALLED BY PLUMBER (UNO). VERIFY SPECIFICATIONS WITH CLIENT.
14. WHERE FULL HEIGHT 3/4" BACKSPLASH IS SPECIFIED, EXTEND PLUMBING SERVICES OUT 3/4" AS NEEDED.
15. PLUMBER TO SUPPLY ALL NECESSARY ACCESSORIES, FIXTURES, AND FITTINGS.
16. EYEWASH STATIONS TO COMPLY WITH ANSI Z358.1-2009 EYEWASH STANDARD AS WELL AS ALL APPLICABLE LOCAL CODES.
17. ALL ADA TOILETS TO BE INSTALLED WITH OPEN-FRONT TOILET SEATS AND TRIP LEVERS ON THE APPROACH SIDE.
18. AT MEDICAL UTILITY ROOMS, VERIFY REQUIREMENTS FOR BACKFLOW PREVENTERS, AND PROVIDE FLOOR SINK OR DIRECT DRAIN AS REQUIRED.

ELECTRIC WATER HEATER SCHEDULE

DESIGNATION:	EWH 1
ZONE:	1ST FLOOR
MANUFACTURER:	A. O. SMITH
MODEL:	DRE-50 (NSF)
TYPE:	TANK TYPE - 2 ELEMENT- NON SIMULT.
WATTS:	6 KW EACH
TEMP. RISE.	–
VOLTAGE:	VERIFY
PHASE:	1
REMARKS:	(1)(2)(3)

(1) U.L. LISTED
(2) WITH PRESSURE AND TEMPERATURE RELIEF VALVE.
(3) PROVIDE WATER HEATER WITH REQUIRED EXPANSION TANK AMTROL # ST-12-C (6.4 GAL) AND ALL REQUIRED ACCESSORIES.



TYPICAL DISHWASHER CONN. DETAIL 2 P1.0
NO SCALE

INSTRUCTION TO BIDDERS

1. VERIFY WITH LANDLORD AND GENERAL CONTRACTOR FOR LANDLORD FURNISHED ITEMS PRIOR TO BIDDING/CONSTRUCTION.
2. DESIGN DRAWINGS ARE SCHEMATIC. THIS CONTRACTOR SHALL VISIT THE SITE PRIOR TO BIDDING OR AWARD OF CONTRACT TO INSPECT EXISTING FIELD CONDITIONS. THIS CONTRACTOR SHALL INCLUDE ALL LABOR AND MATERIALS NECESSARY FOR FIELD MODIFICATIONS DUE TO EXISTING CONDITIONS.
3. THE CONTRACTOR SHALL CONTACT THE ARCHITECT, ENGINEER OR OWNER PRIOR TO BIDDING FOR INTERPRETATIONS AND CLARIFICATIONS OF THE DESIGN AND INCLUDE IN HIS BID ALL COSTS TO MEET THE DESIGN INTENT. CLARIFICATIONS MADE BY THE ARCHITECT, ENGINEER OR OWNER AFTER BIDDING WILL BE FINAL AND SHALL BE IMPLEMENTED AT CONTRACTOR'S COST.
4. BIDDING CONTRACTORS SHALL HAVE A WORKING KNOWLEDGE OF LOCAL CODES AND ORDINANCES AND SHALL INCLUDE IN THEIR BIDS THE COSTS FOR ALL WORK INSTALLED IN STRICT ACCORDANCE WITH GOVERNING CODES, THE PLANS AND SPECIFICATIONS NOT WITHSTANDING. THE CONTRACTOR SHALL ALERT ARCHITECT, ENGINEER OR OWNER OF ANY APPARENT DISCREPANCIES BETWEEN GOVERNING CODES AND DESIGN INTENT.

PLAN INDEX:

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P3.0	FLOOR PLAN - COLD WATER & HOT WATER
P4.0	FLOOR PLAN - COMPRESSED AIR & VACUUM
P4.1	COMPRESSOR AIRSTAR SYSTEM - DETAILS/SPEC.
P4.2	VACUUM SYSTEM - DETAILS/SPEC.
P5.0	SPECIFICATIONS - PLUMBING

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SHEET TITLE:
GENERAL NOTES, SCHEDULES, LEGEND AND DETAILS - PLUMBING

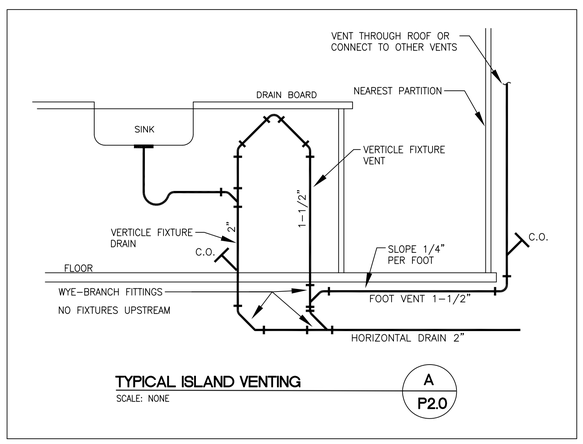
REVISIONS:

NO.	DESCRIPTION

JOB NO.: 216081
DATE: 06/24/2016 PERMIT SET

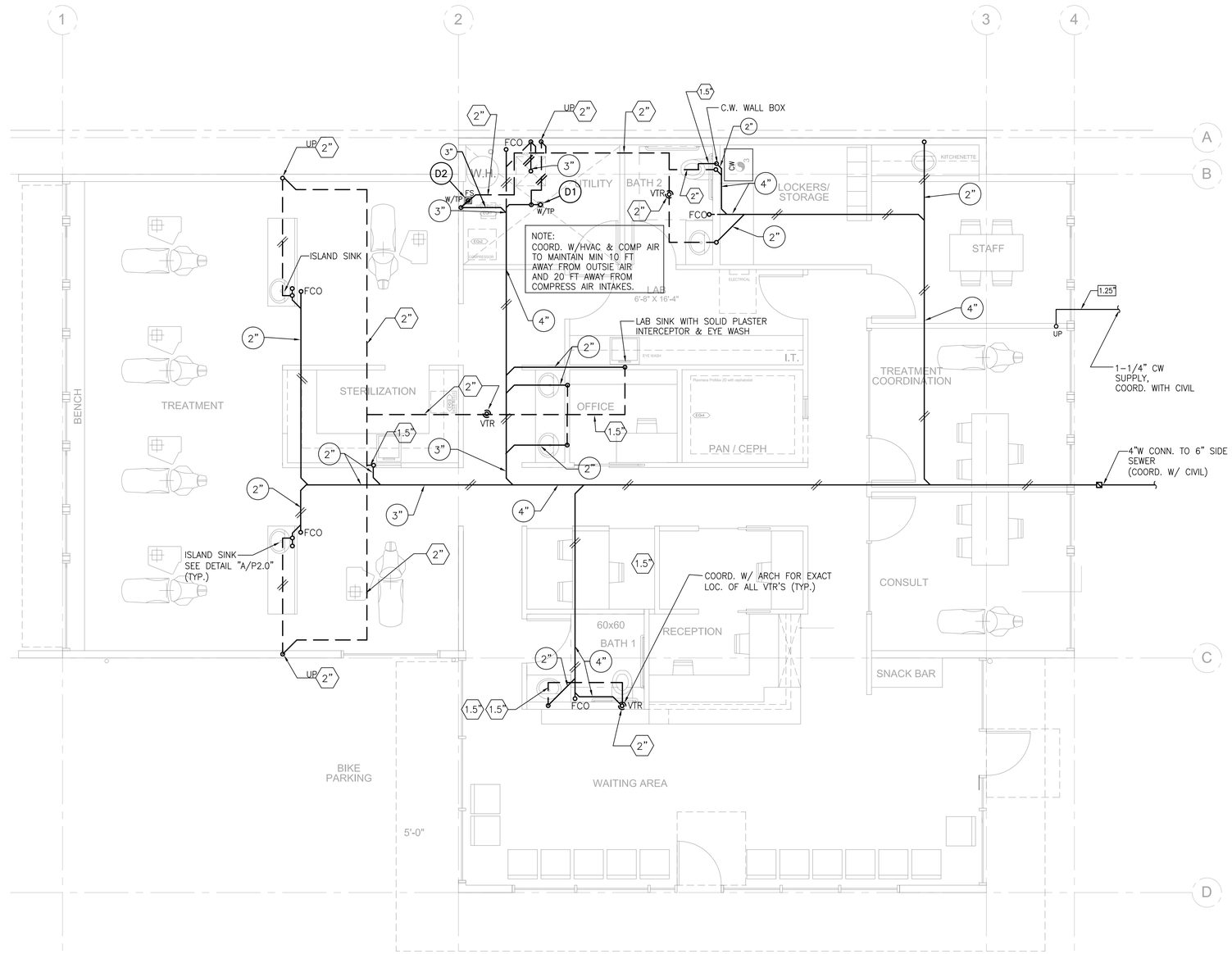
P1.0

REVDATE:



TYPICAL ISLAND VENTING (A / P2.0)

SCALE: NONE



FLOOR PLAN – WASTE & VENT – PLUMBING

SCALE: 1/4"=1'-0"

NORTH

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SHEET TITLE: FLOOR PLAN – WASTE & VENT – PLUMBING

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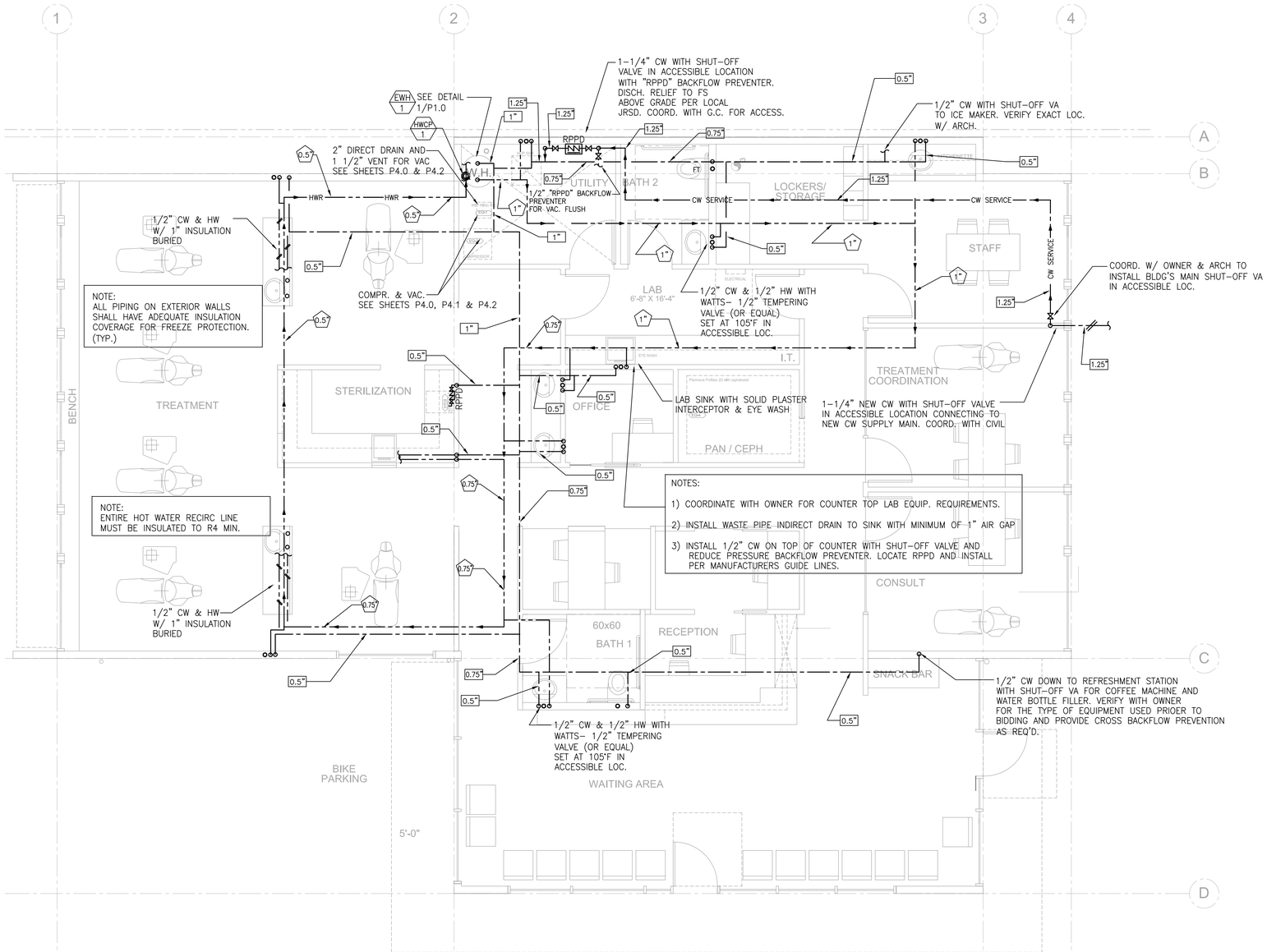
JOB NO.: 216081

DATE: 06/30/2016 PERMIT SET

P2.0

(2 OF 7)

REV/DATE:



FLOOR PLAN - COLD WATER & HOT WATER - PLUMBING

SCALE: 1/4"=1'-0"

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SHEET TITLE:
FLOOR PLAN - COLD WATER & HOT WATER - PLUMBING

REVISIONS:

NO.	DESCRIPTION

JOB NO.: 216081
DATE: 06/30/2016 PERMIT SET

P3.0

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REVDATE:

NOTE:
ABOVE GRADE PIPING SHALL BE LABELED AT LEAST ONCE WITHIN EACH ROOM (INTERVALS OF NOT MORE THAN 20' FOR ABOVE GRADE PIPING IF INSTALLED)

COMPRESSED AIR SHALL BE LABELED WITH YELLOW WITH WHITE DIAGONAL STRIPES WITH BLACK LETTERING

VACUUM SYSTEM SHALL BE LABELED WITH WHITE AND BLACK DIAGONAL STRIPES AND BLACK BOXED BLACK LETTERING

SEE NFPA TABLE 5.1.11 FOR GRAPHIC REPRESENTATION

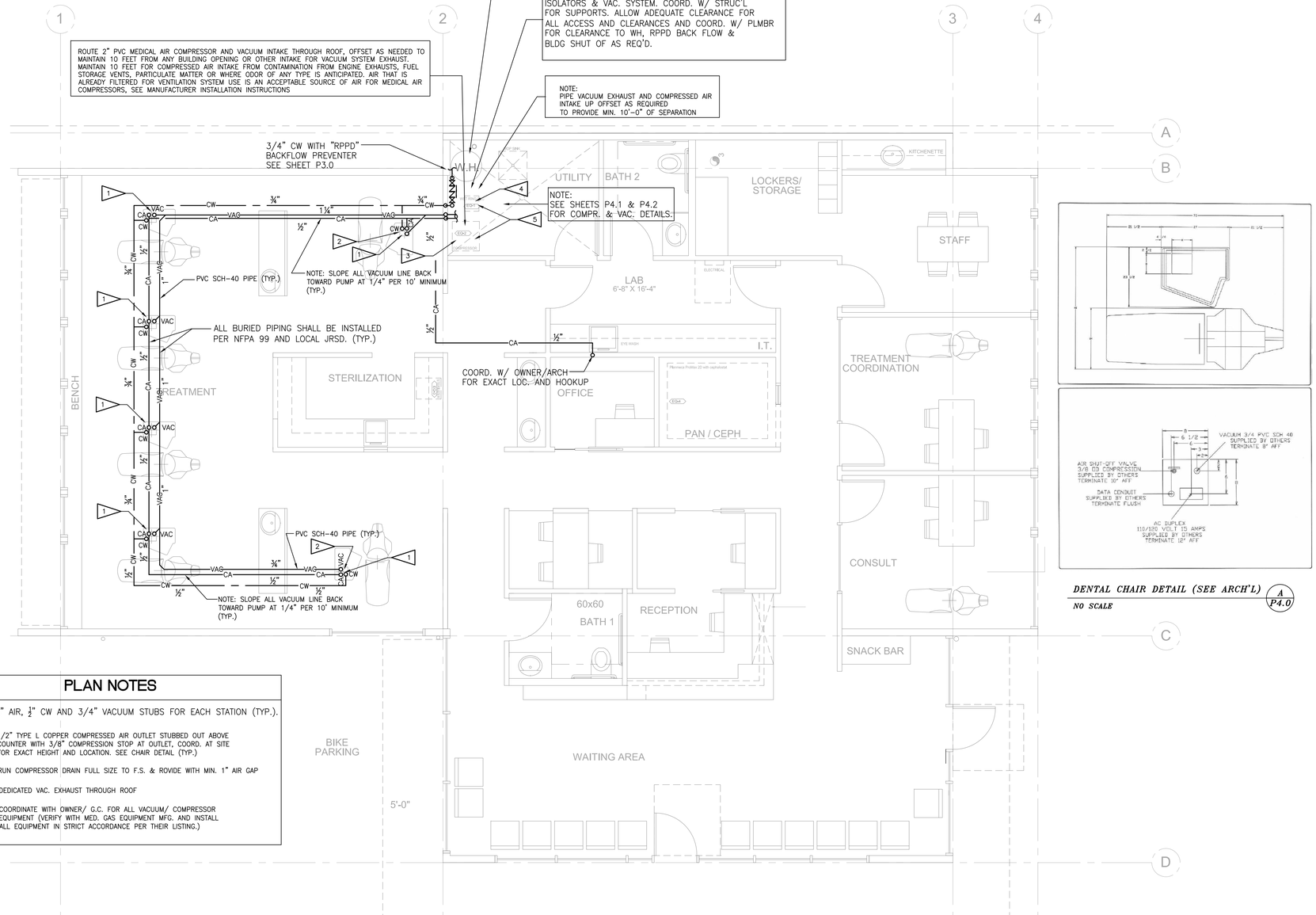
NOTE:
ALL COMPRESSED AIR AND VACUUM EQUIPMENT, PIPING AND INSTALLTION SHALL BE PER NFPA-99, MANUFACTURERS INSTALLATION MANUALS AND DESIGN GUIDE LINES AND LOCAL JRSD.
(SEE SHEETS P4.1 & P4.2 FOR ADD'L INFO.)
(TYP.)

NOTE:
DRIP PAN DRAIN MUST NOT DRIP TO FLOOR & MUST NOT CAUSE TRIPPING HAZARDS

ROUTE 2" PVC MEDICAL AIR COMPRESSOR AND VACUUM INTAKE THROUGH ROOF, OFFSET AS NEEDED TO MAINTAIN 10 FEET FROM ANY BUILDING OPENING OR OTHER INTAKE FOR VACUUM SYSTEM EXHAUST. MAINTAIN 10 FEET FOR COMPRESSED AIR INTAKE FROM CONTAMINATION FROM ENGINE EXHAUSTS, FUEL STORAGE VENTS, PARTICULATE MATTER OR WHERE ODOR OF ANY TYPE IS ANTICIPATED. AIR THAT IS ALREADY FILTERED FOR VENTILATION SYSTEM USE IS AN ACCEPTABLE SOURCE OF AIR FOR MEDICAL AIR COMPRESSORS, SEE MANUFACTURER INSTALLATION INSTRUCTIONS

COORD. W/ ARCH & GC & MED. GAS EQUIP. SUPPLIER FOR INSTALLATION OF COMPR. ON FLOOR VIA VIB ISOLATORS & VAC. SYSTEM. COORD. W/ STRUC'L FOR SUPPORTS. ALLOW ADEQUATE CLEARANCE FOR ALL ACCESS AND CLEARANCES AND COORD. W/ PLMBR FOR CLEARANCE TO WH, RPPD BACK FLOW & BLDG SHUT OF AS REQ'D.

NOTE:
PIPE VACUUM EXHAUST AND COMPRESSED AIR INTAKE UP OFFSET AS REQUIRED TO PROVIDE MIN. 10'-0" OF SEPARATION



DENTAL CHAIR DETAIL (SEE ARCH'L) (A / P4.0)

NO SCALE

PLAN NOTES

1. ½" AIR, ½" CW AND 3/4" VACUUM STUBS FOR EACH STATION (TYP.).
2. 1/2" TYPE L COPPER COMPRESSED AIR OUTLET STUBBED OUT ABOVE COUNTER WITH 3/8" COMPRESSION STOP AT OUTLET, COORD. AT SITE FOR EXACT HEIGHT AND LOCATION. SEE CHAIR DETAIL (TYP.)
3. RUN COMPRESSOR DRAIN FULL SIZE TO F.S. & ROVIDE WITH MIN. 1" AIR GAP
4. DEDICATED VAC. EXHAUST THROUGH ROOF
5. COORDINATE WITH OWNER/ G.C. FOR ALL VACUUM/ COMPRESSOR EQUIPMENT (VERIFY WITH MED. GAS EQUIPMENT MFG. AND INSTALL ALL EQUIPMENT IN STRICT ACCORDANCE PER THEIR LISTING.)

FLOOR PLAN – COMPRESSED AIR & VACUUM & CW – PLUMBING

SCALE: 1/4"=1'-0"

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SHEET TITLE:
FLOOR PLAN – COMPRESSED AIR AND VACUUM & CW – PLUMBING

REVISIONS:

NO.	DESCRIPTION

JOB NO.: 216081
DATE: 06/30/2016 PERMIT SET

P4.0

(4 OF 7)

REVDATE:

MIDMARK

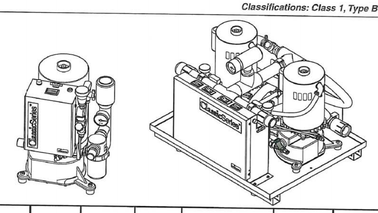
ClassicSeries™ Wet-Ring Vacuum Pre-Installaion Guide

Applies to Models:
CV3, CV3R
CV5, CV5R (Single Units)

CV6, CV6R
CV10, CV10R (Twin Units)

Classifications: Class 1, Type B Applied Part

Specifications



Vacuum Model	Max. Users	Width (IN.)	Depth (IN.)	Height (IN.)	Weight (LBS.)	Total HP	Voltage (50/60 Hertz)	Breaker Size per Pump (Amps)	Inlet Connection Size (IN.)	Drain Connection Size (IN.)	Fresh Water Connection Size (FNPT)
CV3	3	12"	13"	15"	54	1	115 / 208-230	20	1"	1"	1/2"
CV3R	3	12"	13"	15"	56	1	115 / 208-230	20	1"	1"	1/2"
CV5	5	12"	13"	17"	63	2	208-230	20	1"	1"	1/2"
CV5R	5	12"	13"	17"	65	2	208-230	20	1"	1"	1/2"
CV6	6	25 1/2"	20"	18 1/2"	134	2	115 / 208-230	20	1 1/4"	1 1/4"	1/2"
CV6R	6	25 1/2"	20"	18 1/2"	134	2	115 / 208-230	20	1 1/4"	1 1/4"	1/2"
CV10	10	25 1/2"	20"	18 1/2"	154	4	208-230	20	1 1/4"	1 1/4"	1/2"
CV10R	10	25 1/2"	20"	18 1/2"	154	4	208-230	20	1 1/4"	1 1/4"	1/2"

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10546900 Rev. A

Wet-Ring Vacuum Site Requirements

Equipment Alert
Harmful odors, vapor contaminants and nitrous oxide gasses are vented out the top of the separator, while liquid waste flows out of the lower drain and into a "P"-Trap or floor sink. **Verify all local codes before installing.**

	Models							
	Single Models				Twin Models			
Electrical								
Supply	CV3	CV3R	CV5	CV5R	CV6	CV6R	CV10	CV10R
Voltage	115 or 208-230	115 or 208-230	208-230	208-230	115 or 208-230 (Each Pump)	115 or 208-230 (Each Pump)	208-230 (Each Pump)	208-230 (Each Pump)
Phase	Single Phase, 50 / 60 Hz							
Wire Size to Control Panel	18 / 3 Jacketed Belt Wire							
Circuit Size Per Pump	20 AMP Minimum							
115 VAC 60 HZ	15.0 AMP	15.0 AMP			15.0 AMP	15.0 AMP		
208/230 VAC 60 HZ	8.2 / 7.5 AMP	8.2 / 7.5 AMP	13.1 / 11.9 AMP	13.1 / 11.9 AMP	8.2 / 7.5 AMP	8.2 / 7.5 AMP	13.1 / 11.9 AMP	13.1 / 11.9 AMP
208/230 VAC 50 HZ	8.2 / 8.1 AMP	8.2 / 8.1 AMP	11.2 / 11.1 AMP	11.2 / 11.1 AMP	8.2 / 8.1 AMP	8.2 / 8.1 AMP	11.2 / 11.1 AMP	11.2 / 11.1 AMP
Plumbing								
Intake (Suction Line)								
Type	PVC *Note: 3/4" Check valve is required on all inlets and outlets. Copper pipe is required only for return plenum installations.							
Line Sizing	1" Hose with 3/4" NPT Connection				1 1/2" Hose with 1 1/4" NPT Connection			
Water Source								
Type	Poly Tubing							
Line Sizing	1/2" NPT x 1/4"				1/2" NPT x 3/8"			
Pressure Range	20-120 psi / 1.4-8.3 bar							
Water Temperature Range	35-80° F / 2-12° C							
Separator	Small				Large			
Vent Size	2"							
Inlet Hose	3/4" NPT				1 1/4" NPT			
Drain Hose	3/4" NPT				1" NPT			
Platform Drain Hose								
Type	N/A				Clear Vinyl			
Size	N/A				3/8" OD			
Exhaust								
Type	PVC							
Line Sizing	1" Hose with 3/4" NPT Connection				1 1/2" Hose with 1 1/4" NPT Connection			
Environmental								
Equipment Room Ambient Temperature - Operational	40° - 104° Fahrenheit / 4° - 40° Celsius							

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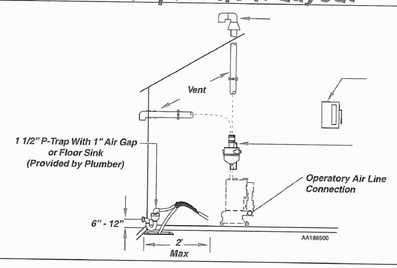
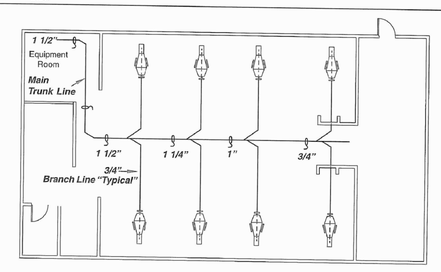
Wet-Ring Vacuum Site Requirement Layout



VACUUM LINE SIZING CHART

Number of Operatories Supplied Through Line	Main Line (PVC Sch 40) Pipe Diameter in Inches
1-2	3/4
3-4	1
5-6	1 1/4
7-10	1 1/2



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WET RING – VACUUM SYSTEM – PLUMBING

ABOSSEIN ENGINEERING L.L.C

MECHANICAL – ELECTRICAL
CIVIL – LEED – STRUCTURAL
FIRE PROTECTION

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SHEET TITLE:
WET RING – VACUUM SYSTEM
DETAILS – PLUMBING

REVISIONS:

NO.	DESCRIPTION

JOB NO.: 216081
DATE: 06/30/2016 PERMIT SET

P4.1

(5 OF 7)

REV/DATE:

MIDMARK

Classic Series™ & PowerAir™ Compressor Pre-Installaion Guide

Applies to Models:
P3, P5, P7 (Single Units)
P9, P10, P14 (Twin Units)

Classifications: Class 1, Type B Applied Part

Classic Series™ Specifications

Model	# of Users	CFM @ 80 PSI	Total HP	Tank Capacity	Voltage	Total Amps	Breaker Size (Amps)	Sound Level (dbA)	Dimensions H x W x D (IN.)	Product Weight (lbs.)	Fresh Air Intake Pipe Size
CL21	1 - 3	5.3	1.0	10	115	12.4	20	68	29 x 26 x 24	202	2"
CL22	1 - 3	5.3	1.0	10	208-230	6	20	68	29 x 26 x 24	202	2"
CL32	3 - 5	10.6	2.0	20	208-230	12	20	71	31 x 33 x 26	329	2"
CL52	5 - 7	15.9	3.0	32	208-230	18	30	75	32 x 41 x 27	460	2"

PowerAir™ Specifications

Model	# Users	CFM @ 80 PSI	Total HP	Tank Capacity	Voltage	Total Amps	Breaker Size	Sound Level (dBA)	Sound Level (dBA) With Quiet Cover	Dimensions H x W x D (IN.)	Dimensions With Sound Cover H x W x D (IN.)	Product Weight (LBS.)	Fresh Air Intake Pipe Size
P21	1 - 3	5.2	1.5	10	115	16.0	20	65	60	27 x 26 x 24	32 x 26 x 25	225	2"
P22	1 - 3	5.2	1.5	10	208-230	7.0	20	65	60	27 x 26 x 24	32 x 26 x 25	225	2"
P32	3 - 5	7.8	2.25	20	208-230	11.0	20	67	62	29 x 33 x 26	33 x 33 x 28	295	2"
P52	5 - 7	10.6	3.2	20	208-230	20.0	30	70	65	31 x 33 x 26	33 x 33 x 28	345	2"
P72	7 - 10	15.9	4.8	32	208-230	29.0	40	73	68	33 x 40 x 27	39 x 40 x 30	425	2"

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Compressor Site Requirements

Electrical

Supply	Models								
	CL21	CL22	CL32	CL52	P21	P22	P32	P52	P72
Voltage	115	208-230	208-230	208-230	115	208-230	208-230	208-230	208-230
Single Phase	60 Hz	50 / 60 Hz			60 Hz				
Disconnect Switch Box - Fused - User Supplied - Box(es) must be located within 3 ft. of compressor	20 Amps	20 Amps	20 Amps	30 Amps	20 Amps	20 Amps	20 Amps	30 Amps	40 Amps

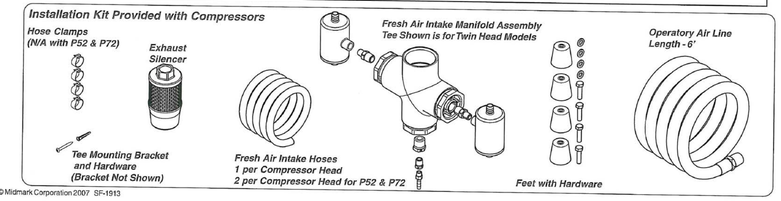
Plumbing

Fresh Air Intake Line	
Type	PVC, SCH 40, 6 L
Line Sizing	2" Fresh Air Intake Kit (Provided) Stub 2" PVC
Compressor Head Connections	(Provided with Install Kit)
Drain	
Type	Poly Tube (Provided with Install Kit)
Delivery Line	
Main Trunk Line	3/8" to 3/4" Copper, as site layout dictates. Terminate in mechanical room with 1/2" FPT. Flex hose provided for service connection. Trunk line to slope 1/4" / 10ft toward source compressor.
Operatory Branch Lines	3/8" to 3/4" Copper - Same size as trunk line. Terminate 1/2" or 5/8" FPT at Operatory junction box location.

Environmental

Equipment Room Ambient Temperature - Operational	40° - 104° Fahrenheit / 4° - 40° Celsius

Installation Kit Provided with Compressors



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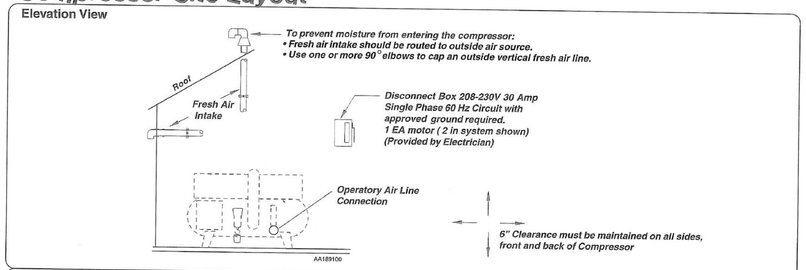
Compressor Site Layout

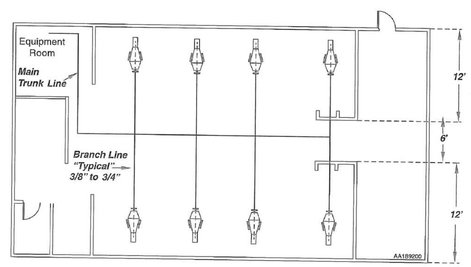
Elevation View



Sample Plumbing Layout

AIR LINE SIZING CHART

Compressor CFM @ 80 psig	Main Header Line Size
5 - 10	3/8" ODT
10 - 20	1/2" ODT
20 - 30	5/8" ODT
30 - 40	3/4" ODT



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POWER AIR COMPRESSOR SYSTEM – PLUMBING

REV/DATE:

ABOSSEIN ENGINEERING L.L.C

MECHANICAL – ELECTRICAL
CIVIL – LEED – STRUCTURAL
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ISSAQUAH, WA 98027

SHEET TITLE:
POWER AIR COMPRESSOR SYSTEM
DETAILS - PLUMBING

REVISIONS:
NO. DESCRIPTION

JOB NO.: 216081
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P4.2

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PLUMBING SPECIFICATIONS - DIVISION #22

PART 1.00 GENERAL

1.01 LOCAL CONDITIONS: VISIT AND INSPECT THE PREMISES TO ASCERTAIN THE EXISTING CONDITIONS BEFORE SUBMITTING A BID. NO EXTRA PAYMENT WILL BE ALLOWED FOR THE LACK OF KNOWLEDGE OF THESE CONDITIONS.

1.02 CODES: STRICTLY COMPLY WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL CODES AND REGULATIONS.
IMC – Mechanical Code
UPC – Plumbing Code

1.03 STANDARDS: THE FOLLOWING PUBLICATIONS (LATEST EDITION) FORM A PART OF THESE REQUIREMENTS TO THE EXTENT INDICATED BY THE REFERENCES THERETO:

NFPA PAMPHLET 54 GAS APPLIANCES & GAS PIPING
NFPA PAMPHLET 90A AIR CONDITIONING & VENTILATION SYSTEMS

1.04 PLANS AND SPECIFICATIONS: THE PLUMBING DRAWINGS ARE DIAGRAMMATIC IN CHARACTER INTENDED TO CONVEY THE SCOPE OF WORK AND INDICATE THE GENERAL ARRANGEMENT OF EQUIPMENT, PIPING, ETC., AND APPROXIMATE SIZES AND LOCATIONS OF EQUIPMENT AND OUTLETS. DETERMINE THE EXACT LOCATION OF THE ELEMENTS OF THE SYSTEM FROM THE STRUCTURE AND FROM THE EQUIPMENT, NOT FROM THE DRAWINGS. DO NOT SCALE DRAWINGS FOR MEASUREMENTS NOR USE AS SHOP DRAWINGS.

1.05 PROVIDE ALL ITEMS, EQUIPMENT, MATERIALS, OPERATIONS, OR METHODS LISTED, MENTIONED OR SCHEDULED ON THE DRAWINGS, AND/OR HEREIN INCLUDING ALL INCIDENTALS AND ACCESSORIES NECESSARY AND REQUIRED FOR INSTALLATION OR MOUNTING, OR NORMALLY SUPPLIED BY COMMON PRACTICE WHETHER SPECIFICALLY MENTIONED OR NOT, TO PROVIDE COMPLETE AND PROPERLY FUNCTIONING SYSTEMS.

1.06 BRING ANY NON–COMPLIANCES WITH ALL APPLICABLE LOCAL, STATE AND FEDERAL CODES AND REGULATIONS, CONFLICTS AND DISCREPANCIES TO THE ENGINEER'S ATTENTION BEFORE SUBMITTING BID. A CORRECT, COMPLETE AND EASILY MAINTAINED SYSTEM IS INTENDED.

1.07 THE CONTRACTOR'S BID WILL BE CONSTRUED AS AN AGREEMENT TO COMPLETE THE WORK WITHOUT ADDITIONAL COST TO THE OWNER. WHERE CONFLICTS BETWEEN PLANS AND SPECIFICATIONS OR CONFLICTING INFORMATION ON THE PLANS OCCURS, THE CONFLICTS SHALL BE REPORTED TO THE ARCHITECT PRIOR TO BIDDING. THE MORE COSTLY ALTERNATIVE SHALL BE INCLUDED IN THE BID PRICE.

1.08 MAKE NO CHANGES IN THE WORK SPECIFIED, UNLESS SUCH CHANGES ARE AUTHORIZED IN WRITING BY THE OWNER, ARCHITECT AND/OR ENGINEER. NO CHARGES FOR EXTRA WORK WILL BE PAID UNLESS SUCH EXTRA WORK HAS BEEN AUTHORIZED AND THE AUTHORIZATION CONTAINS A STATEMENT OF THE WORK TO BE ACCOMPLISHED AND THE CHARGES TO BE MADE FOR THE WORK.

1.09 THE INFORMATION PRESENTED ON THESE DRAWINGS IS DIAGRAMMATIC IN NATURE. IT DOES NOT NECESSARILY REPRESENT ALL FITTINGS, HANGERS, ETC. REQUIRED FOR A COMPLETE WORKING SYSTEM. PROVIDE ALL MATERIALS AND LABOR FOR COMPLETELY FINISHED AND OPERATIONAL SYSTEMS.

1.10 REFER TO LATEST ARCHITECTURAL DRAWINGS FOR: EXACT WALL LOCATIONS, DIMENSIONS, AND PLUMBING FIXTURE LOCATIONS AND REQUIREMENTS.

1.11 CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY ALTERATIONS REQUIRED BY THE OWNER, ARCHITECT, OR FIELD CONDITIONS.

1.12 ALL EQUIPMENT SHALL BE NEW, SHALL COMPLY WITH SPECIFICATIONS ON DRAWINGS, AND SHALL COMPLY WITH ENERGY CONSERVATION CODE REQUIREMENTS AS ADOPTED BY THE STATE, AS WELL AS LOCAL JURISDICTIONAL BUILDING DEPARTMENT. SUBMIT DATA FOR APPROVAL PRIOR TO ORDERING EQUIPMENT. SUBMITTAL SHALL INCLUDE ENERGY CODE COMPLIANCE CERT–IFICATION.

1.13 THE CONTRACTOR SHALL REFER TO ALL OTHER DRAWINGS, INCLUDING: ARCHITECTURAL, STRUCTURAL, MECHANICAL, ELECTRICAL, AND FOOD SERVICE, FOR ALL COORDINATION AND REFERENCE DATA. COORDINATE INSTALLATION WITH WORK OF OTHER TRADES.

1.14 DURING BID PERIOD: INVESTIGATE AND VERIFY EXISTING CONDITIONS, EXACT LOCATIONS, ELEVATIONS, AND CHARACTERISTICS OF EXISTING UTILITIES AND PIPING. BRING ANY DISCREPANCIES TO ATTENTION OF ARCHITECT AS SOON AS POSSIBLE.

1.15 REVIEW ELECTRICAL LAYOUT, ROUTING OF UNDERGROUND ELECTRICAL UTILITIES INCLUDING POWER AND TELEPHONE, NEW AND EXISTING UNDERGROUND ELECTRICAL CONDUIT LINES, PRIOR TO START OF WORK.

1.16 CONSULT WITH ALL TRADES AND DETERMINE EXTENT OF PLUMBING WORK DURING BID PERIOD. EXTEND ALL SERVICES TO LOCATIONS DESIGNATED AND REQUIRED, FURNISH ALL MATERIALS, AND PAY ALL COSTS NOT FURNISHED BY OTHERS.

1.17 IT IS THE INTENT OF THESE SPECIFICATIONS TO PROVIDE A MECHANICAL SYSTEM COMPLETE, FULLY ADJUSTED, AND READY FOR OWNER'S BENEFICIAL USE.

1.18 IT IS THE INTENTION OF THESE SPECIFICATIONS AND DRAWINGS TO CALL FOR FINISHED WORK, TESTED, AND READY FOR OPERATION. WHEREVER THE WORD "PROVIDE" IS USED, IT SHALL MEAN "FURNISH AND INSTALL COMPLETE AND READY TO USE." MINOR DETAILS NOT USUALLY SHOWN OR SPECIFIED, BUT NECESSARY FOR THE PROPER INSTALLATION AND OPERATION, SHALL BE INCLUDED IN THE WORK, THE SAME AS IF HEREIN SPECIFIED OR SHOWN.

1.19 THE CONTRACTOR SHALL GIVE ALL NECESSARY NOTICES, OBTAIN ALL PERMITS AND PAY ALL GOVERNMENT SALES TAXES, FEES AND OTHER COSTS, INCLUDING UTILITY CONNECTIONS OR EXTENSIONS, IN CONNECTION WITH HIS WORK; FILE ALL NECESSARY PLANS, PREPARE ALL DOCUMENTS AND OBTAIN ALL NECESSARY APPROVALS OF ALL GOVERNMENTAL DEPARTMENTS HAVING JURISDICTION; OBTAIN ALL REQUIRED CERTIFICATES OF INSPECTION OF HIS WORK AND DELIVER SAME TO THE ARCHITECT BEFORE REQUEST FOR ACCEPTANCE AND FINAL PAYMENT FOR WORK.

1.20 THE CONTRACTOR SHALL INCLUDE IN THE WORK, WITHOUT EXTRA COST TO THE OWNER, ANY LABOR, MATERIALS, SERVICES, APPARATUS, DRAWINGS, IN ORDER TO COMPLY WITH ALL APPLICABLE LAWS, ORDINANCES, RULES AND REGULATIONS, WHETHER OR NOT SHOWN ON DRAWINGS AND/OR SPECIFIED.

PART 2.00 PRODUCTS

2.01 MATERIALS AND EQUIPMENT SUBSTITUTIONS:
THE BID PRICE SHALL BE BASED ON THE MATERIALS, EQUIPMENT AND/OR SERVICES AS SCHEDULED ON THE DRAWINGS AND/OR SPECIFIED HEREIN, AND/OR AS ACCEPTED PRIOR TO BIDDING.

2.02 ACCEPTANCE OF ALTERNATE OR SUBSTITUTE EQUIPMENT IN NO WAY VOIDS MATERIAL OR PERFORMANCE REQUIREMENTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PERFORMANCE OF ANY MATERIAL OR EQUIPMENT SUBSTITUTED FOR SPECIFIED ITEMS ACCEPTED BY THE ARCHITECT AND/OR ENGINEER BEFORE OR AFTER THE BID DATE. CONTRACTOR SHALL BE RESPONSIBLE FOR INCORPORATING ANY SUBSTITUTE EQUIPMENT IN THE SYSTEM DESIGN.

2.03 CONTRACTOR SHALL PAY FOR ALL EXTRA COSTS BY ANY TRADE FOR CHANGES NECESSITATED BY MATERIAL OR EQUIPMENT SUBSTITUTIONS REGARDLESS OF ACCEPTANCE WITHOUT FURTHER COST TO THE CLIENT.

2.04 DOMESTIC WATER PIPING ABOVE GROUND SHALL BE TYPE "L" HARD DRAWN COPPER WITH WROUGHT COPPER FITTINGS OR PEX. JOINTS AND CONNECTIONS SHALL BE COMPLETED WITH 95 PER– CENT TIN, 5 PERCENT ANTIMONY OR PEX JOINTS. WATER PIPING BELOW GROUND SHALL BE TYPE "K", NON–METALIC PVC "GOLD" (OR EQUAL) MAY BE USED IN–LIEU OF COPPER PIPING IF ITEMIZED AS A "DEDUCT" IN BID AND SUBMITTED FOR THE OWNER'S CONSIDERATIONS.

2.05 WASTE AND VENT PIPING SHALL BE SERVICE WEIGHT CAST IRON SOIL PIPE WITH NO HUB FITTINGS. PVC OR APPROVED ABS NON–METALIC PIPING SHALL BE IN ACCORDANCE WITH THE INTERNATIONAL PLUMBING CODE. ALTERNATES SHALL BE SUBMITTED TO OWNER AND APPROVED BY THE BUILDING DEPARTMENT PRIOR TO START OF WORK. NON–METALIC PIPING MAY BE USED FOR UNDERGROUND HOWEVER ABOVE GROUND PIPING (AND PROPERLY FIRE STOPPED) WHERE APPROVED BY LOCAL JURISDICTION SHALL BE ITEMIZED "DEDUCT" IN BID FOR OWNER'S CONSIDERATIONS.

2.06 INSULATE ALL PIPING, VALVES, AND FITTINGS FOR DOMESTIC COLD, HOT AND RECIRC. LINES WITH (1/2" CW, 1" HW & RECIRC) PRE–FORMED FIBERGLASS INSULATION WITH "K" FACTOR OF 0.30 MAXIMUM AT 200 deg. F. MEAN TEMPERATURE. PROVIDE ALL SERVICE, SELF LAP JACKET, AND VAPOR BARRIER. INSULATE CONDENSATE DRAINS W/\" ARMAFLEX #22 OR "JM" AEROTUBE INSULATION. PROVIDE ADDITIONAL INSULATION IN AREAS SUBJECT TO FREEZING. SEE SPECIFICATION FOR TRACED–LINE INSULATION.

2.07 NO STRUCTURAL MEMBERS SHALL BE CUT WITHOUT THE APPROVAL OF THE ARCHITECT, AND ALL SUCH CUTTING SHALL BE DONE IN A MANNER DIRECTED BY HIM.

2.08 ALL INSULATION SHALL HAVE A COMPOSITE (INSULATION, JACKET OR FACING, AND ADHESIVE) FIRE HAZARD RATING AS TESTED BY ASTM E–84, NFPA 255, OR UL 723, NOT TO EXCEED 25 FLAME SPREAD AND 50 SMOKE DEVELOPED. ACCESSORIES SUCH AS COATINGS, TAPES, AND ADHESIVES SHALL HAVE THE SAME COMPONENT RATINGS. ALL INSULATING MATERIALS OR THEIR CONTAINERS SHALL HAVE A LABEL INDICATING COMPLIANCE WITH THE ABOVE RATING. REFERENCE STANDARDS: NFPA D–255, A.S.T.M. E–84, UL–723, ASHRAE 90–75 AND THE STATE ENERGY CODE (IF APPLICABLE). ACCEPTABLE MANUFACTURERS: CERTAINTEED, OWENS–CORNING, KNAUF AND MANVILLE.

2.09 PIPE MATERIAL:
COLD WATER AND HOT WATER.....COPPER "L" (LEAD FREE), NON–METALLIC PER UPC AND LOCAL JRSD.
WASTE AND VENT.....CAST IRON (ABOVE GRADE), , NON–METALLIC PER G.C. AND LOCAL JRSD.

NOTE: JOINTS AND METHOD OF CONNECTIONS SHALL BE PER THE UPC–CHAPTER #13, ASTM STANDARDS AND MANUFACTURERS RECOMMENDATIONS FOR EACH PIPE TYPE AND APPLICATIONS.

2.10 PIPE INSULATION:
COLD WATER – 1/2" INSULATION WITH VAPOR BARRIER JACKETS.
HOT WATER – 1/2" INSULATION WITH VAPOR BARRIER JACKETS FOR RUNOUTS UP TO 12 FEET, AND 1" INSULATION FOR ALL PIPING UP TO 2" DIAMETER. UNDERGROUND PIPING WITH 1" CLOSED CELL FOAM INSULATION.

PART 3.00 EXECUTIONS

3.01 PERMITS AND INSPECTIONS: APPLY AND PAY FOR ALL PERMITS AND CERTIFICATES OF INSPECTION REQUIRED FOR THE WORK, AND AT COMPLETION, PRESENT THE OWNER WITH THE SIGNED CERTIFICATES OF FINAL INSPECTION.

3.02 UTILITIES: CHARGES BY UTILITY COMPANIES FOR PROVIDING SERVICES SHALL BE PAID BY OWNER AND WILL NOT BE A PART OF THIS CONTRACT. THE CONTRACTOR SHALL DO INSTALLATION WORK NORMALLY PROVIDED IN THIS CONTRACT.

3.03 PLACE AND ARRANGE EQUIPMENT, PIPING, CONTROLS, ETC., TO FIT THE SPACE AVAILABLE. INCLUDING ALL OFFSETS IN PIPING, ETC. REQUIRED.

3.06 SUPERVISION AND WORKMANSHIP: QUALIFIED SUPERVISION FOR EACH TRADE SHALL BE IN CHARGE OF THE WORK AT ALL TIMES AND SHALL BE ON THE JOB SITE WHENEVER WORK IN THAT TRADE IS BEING ACCOMPLISHED.

3.07 ALL WORK SHALL BE DONE IN A FIRST–CLASS MANNER BY WORKMEN SKILLED IN THE TRADE AFFECTED.

3.08 CLEANING PIPING & EQUIPMENT, TESTING:
PLUG ALL NECESSARY OPENINGS OF THE ENTIRE DRAINAGE AND VENTING SYSTEM TO PERMIT THE COMPLETE SYSTEM OR PORTION THEREOF TO BE FILLED WITH WATER TO THE LEVEL OF THE HIGHEST VENT STACK ABOVE THE ROOF OR A VERTICAL STACK MAY BE FILLED WITH WATER TO A HEIGHT OF 10 FT. ABOVE THE HIGHEST HORIZONTAL RUN TO BE TESTED. THE SYSTEM SHALL MAINTAIN THE WATER LEVEL WITHIN 1 IN. WHEN TESTED FOR 30 MINUTES. WHEN AN AIR TEST IS USED, APPLY A PRESSURE OF NOT LESS THAN 5 PSI WITH A FORCE PUMP AND MAINTAIN AT LEAST 15 MINUTES WITHOUT LEAKAGE WHEN TESTED WITH A MERCURY COLUMN GAUGE.

3.09 CLEAN ALL EQUIPMENT, PIPE, VALVES AND FITTINGS OF GREASE, METAL CUTTINGS, DIRT AND SLUDGE THAT MAY HAVE ACCUMULATED BY OPERATION OF THE SYSTEM FOR TESTING. REPAIR ANY STOPPAGE OR DAMAGE TO PARTS OF THE BUILDING, TO IT'S FINISH OR FURNISHINGS DUE TO THE CONTRACTOR'S FAILURE TO PROPERLY CLEAN THE PIPING SYSTEM WITHOUT COST TO THE OWNER. ADJUST THE HOT WATER SYSTEM FOR UNIFORM FLOW. ADJUST FLUSH VALVES AND OTHER PARTS OF THE SYSTEM FOR QUIET OPERATION. AFTER CLEANING THE POTABLE WATER SYSTEM, OR PART THEROF, FILL WITH A SOLUTION CONTAINING 50 PARTS PER MILLION OF AVAILABLE CHLORINE AND ALLOW TO STAND FOR SIX (6) HOURS BEFORE FLUSHING.

3.10 COMPLETION: OPERATE ALL PLUMBING SYSTEMS, INCLUDING ALL EQUIPMENT FURNISHED UNDER THIS DIVISION TO PROVE THAT ALL COMPONENTS ARE PROPERLY OPERATING AND THAT THE COMPLETE INSTALLATION IS FUNCTIONING SMOOTHLY AND NOISELESSLY TO THE FULL EXTENT OF PLANS AND SPECIFICATIONS. ANY REBALANCING, READJUSTING OF SYSTEM ELEMENTS FOUND NECESSARY WHEN THE SYSTEMS ARE SUBJECT TO ACTUAL OPERATING CONDITIONS SHALL BE DONE BY THE CONTRACTOR AT NO EXTRA COST TO THE OWNER.

3.11 OPERATING INSTRUCTIONS:
PROVIDE TYPEWRITTEN OPERATING INSTRUCTIONS IN THE BROCHURE COVERING EACH PIECE OF PLUMBING EQUIPMENT, GIVE NORMAL STARTING AND STOPPING PROCEDURES, ALONG WITH PROPER PARTIES TO CONTACT IN THE EVENT OF EMERGENCY, FAILURE OF EQUIPMENT. OUTLINE OF INSTRUCTIONS AS FOLLOWS:

3.12 AS–BUILT DRAWINGS: SUBMIT AS–BUILT DRAWINGS AT COMPLETION OF WORK.

3.13 GUARANTEE: THE PLUMBING SYSTEM SHALL BE LEFT IN PROPER WORKING ORDER. REPLACE ANY WORK, MATERIAL OR EQUIPMENT PROVIDED UNDER THIS CONTRACT WHICH DEVELOPS DEFECTS WITHIN ONE (1) YEAR FROM DATE OF SUBSTANTIAL COMPLETION WITHOUT ADDITIONAL CHARGES. A NEW ONE (1) YEAR GUARANTEE ON THE AFFECTED ITEM OR ITEMS SHALL BE PROVIDED COMMENCING ON THE DATE OF THE APPROVED REPAIR OR REPLACEMENT.

3.14 CUTTING AND PATCHING: CAREFULLY PERFORM ALL WORK WHERE CUTTING, CHANNELING, CHASING, OR DRILLING OF FLOORS, WALLS, PARTITIONS, CEILINGS OR OTHER SURFACES IS NECESSARY FOR PROPER INSTALLATION OR SUPPORT OF PIPING, OR OTHER PLUMBING EQUIPMENT.

3.15 ANY DAMAGE TO BUILDING, PIPING, EQUIPMENT, PLASTER, WOODWORK OR METAL WORK SHALL BE REPAIRED BY SKILLED MECHANICS OF TRADES INVOLVED, AT NO ADDITIONAL COST TO THE OWNER.

3.16 DO NOT CUT, CHANNEL, CHASE OR DRILL MASONRY OR TILE; OR CUT, DRILL OR WELD STRUCTURAL MEMBERS OF THE BUILDING, ETC., WITHOUT FIRST OBTAINING ARCHITECT'S PERMISSION, IF PERMISSION IS GRANTED, PERFORM THIS WORK IN A MANNER APPROVED BY THE ARCHITECT.

3.17 CAULKING & WATERPROOFING: CAULK AROUND ALL PIPES, ETC. TO PREVENT AIR AND MOISTURE LEAKAGE WITH COMPOUND APPROVED BY ARCHITECT/ENGINEER.

3.18 SEAL AROUND ALL PIPES WITH FIREPROOF CAULKING OR GROUT WHERE THEY PASS THROUGH FLOORS, FIREWALLS, AND SHAFTS.

3.19 INSERTS, SLEEVES & BLOCKOUTS: FURNISH AND INSTALL, PRIOR TO CONCRETE POURING OR OTHER CONSTRUCTION, INSERTS, SLEEVES, OR BLOCKOUTS IN WALLS, FLOOR SLABS, ROOFS AND PARTITIONS FOR PASSAGE OF ALL WORK INSTALLED UNDER THIS DIVISION.

3.20 PROVIDE GALVANIZED IRON AND STEEL PIPE SLEEVES FOR IRON PIPES. USE COPPER SLEEVES FOR COPPER PIPES. PROVIDE WOOD OR STEEL BLOCKOUTS FOR LARGE OPENINGS. SECURE ALL SUCH ITEMS FIRMLY IN POSITION.

3.21 TRENCHING AND BACKFILLING: PERFORM ALL TRENCHING AND BACKFILLING REQUIRED BY WORK PERFORMED UNDER THIS DIVISION. TRENCHES SHALL BE EXCAVATED TO THE DEPTH REQUIRED FOR THE UTILITIES INVOLVED. THE TRENCH BOTTOM SHALL BE FREE FROM STONES OR SOFT SPOTS.

3.22 BACKFILLING PIPING TRENCHES AS SOON AS PIPING IS TESTED AND APPROVED BY THE ARCHITECT AND

EARTH OF SPECIFIED BACKFILL MATERIAL. UNIFORMLY PLACE AND TAMP BACKFILL BY APPROPRIATE METHODS TO ENSURE PROPER ALIGNMENT OF PIPING TO AVOID INJURY TO THE INSTALLED MATERIALS.

3.23 GRADE THE BOTTOM OF TRENCHES TO SECURE THE REQUIRED FALL WITH A UNIFORM PITCH AND ADEQUATE WIDTH TO ENSURE PROPER INSTALLATION OF PIPING. REMOVE DIRT UNDER CAST IRON HUBS SO THAT THE

TO THE PROPER LEVEL WITH GRAVEL.

3.24 ACCESS DOORS AND PANELS: FURNISH AND INSTALL ACCESS DOORS OR PANELS AS SHOWN ON THE DRAWINGS AND/OR AS REQUIRED FOR PROPER ACCESS TO ALL CONCEALED EXPANSION JOINTS, VALVES, ETC. IF ACCESS DOOR OR SIZE IS NOT SHOWN, PROVIDE A SIZE APPROPRIATE TO THE CONDITIONS, BUT IN NO CASE LESS THAN 12 IN. X 12 IN.

3.25 PIPING INSTALLATION: ARRANGE AND INSTALL PIPING APPROXIMATELY AS INDICATED, STRAIGHT, PLUMB AND AS DIRECT AS POSSIBLE. FORM RIGHT ANGLES OR PARALLEL LINES WITH BUILDING WALLS. PRIOR TO INSTALLATION, CHECK MECHANICAL DRAWINGS, ARCHITECTURAL, STRUCTURAL, AND ELECTRICAL DRAWINGS FOR INTERFERENCES. WHERE DEPARTURES FROM INDICATED ARRANGEMENTS ARE REQUIRED, VERIFY PROPOSED CHANGES WITH THE ARCHITECT/ENGINEER BEFORE PROCEEDING. COORDINATE WITH ALL TRADES SO THAT PIPES, CONDUITS, DUCTS, ETC., WILL NOT INTERFERE WITH EACH OTHER.

3.26 CUT PIPES ACCURATELY TO MEASUREMENT ESTABLISHED AT THE BUILDING, AND WORK INTO PLACE WITHOUT SPRINGING OR FORCING. PROPERLY CLEAR ALL WINDOWS, DOOR AND OTHER OPENINGS. MAKE CHANGES IN DIRECTION WITH FITTINGS. WHERE CHANGES IN PIPE SIZES OCCUR, USE ONLY REDUCING FITTINGS. CAP AND/OR PLUG OPEN ENDS OF PIPELINES AND OTHER EQUIPMENT DURING INSTALLATION TO KEEP DIRT OR OTHER FOREIGN MATERIAL OUT OF THE SYSTEM. INSTALL HORIZONTAL PIPING AS HIGH AS POSSIBLE WITHOUT SAGS OR HUMPS. KEEP PIPES CLOSE TO WALLS, PARTITIONS, CEILINGS, OFFSET ONLY WHERE NECESSARY TO FOLLOW WALLS AS DIRECTED. LOCATE GROUPS OF PIPES PARALLEL TO EACH OTHER. SPACE PIPING AT DISTANCES TO PERMIT APPLYING FULL INSULATION AND TO PERMIT ACCESS FOR SERVICING VALVES.

3.27 CONCEAL ALL PIPING IN BUILDING CONSTRUCTION OR UNDERGROUND IN FINISHED AREAS. THE PIPING INSTALLATION SHALL NOT CAUSE DELAY IN THE WORK OF OTHER TRADES. ALLOW AMPLE TIME FOR TESTS AND APPROVAL. KEEP FIXTURE BRANCHES CONCEALED TO POINTS ABOVE FLOOR CLOSE TO FIXTURES. EXPOSED PIPE SHALL BE CHROME PLATED. INSTALL CHROMIUM PLATED WALL AND CEILING PLATES ON ALL PIPES PASSING THROUGH WALLS, PARTITIONS, AND FLOORS WHEREVER PIPING IS EXPOSED IN FINISHED PARTS OF THE BUILDING.

3.28 PROVIDE UNIONS OR FLANGES TO ALLOW REMOVAL OF EACH PIECE TO EQUIPMENT OR CONTROL DEVICE. LOCATE BETWEEN SHUT–OFF AND EQUIPMENT.

3.29 LOCATE PIPE SUPPORT HANGERS SPACED ON STRAIGHT RUNS NOT TO EXCEED 6 FT. FOR SIZES UP TO 1–\" AND NOT TO EXCEED 10 FT. FOR SIZES 2" AND LARGER.

3.30 PROVIDE LINE SIZE VALVES WHERE INDICATED. VALVES IN HORIZONTAL LINES SHALL BE INSTALLED WITH STEMS HORIZONTAL OR ABOVE THE LINE. ISOLATION VALVES SHALL BE INSTALLED IN WATER LINES CONNECTED TO EACH PIECE OF EQUIPMENT AND AT ANY OTHER POINTS INDICATED.

3.31 JOINTS
TAPERED THREADS OF SCREW JOINTS SHALL BE PROPERLY CUT. SEAL SCREWS JOINTS WITH AN APPROVED PIPE JOINT COMPOUND OR TAPE APPLIED TO THE PIPE THREADS AND NOT THE FITTING.

3.32 CUT COPPER TUBING SQUARE AND REMOVE BURRS. CLEAN BOTH INSIDE OF FITTINGS AND OUTSIDE OF TUBING WITH STEEL WOOL BEFORE SWEATING. DO NOT ANNEAL FITTINGS AND TUBING WHEN MAKING CONNECTIONS. USE COMPOSITION LEAD FREE SOLDER FOR ALL JOINTS.

3.33 FIXTURE INSTALLATION: PROVIDE ALL HANGERS NECESSARY TO PROPERLY SECURE FIXTURES TO THE TYPE OF CONSTRUCTION USED. COVER ALL FIXTURES WITH MANILLA PAPER. DO NOT REMOVE UNTIL COMPLETION OF THE WORK. INSTALL SUCH GUARDS AND BOXING AS NECESSARY TO PROTECT FIXTURES AGAINST DAMAGE DURING CONSTRUCTION. PROVIDE STOPS ON THE SUPPY PIPING TO EACH FIXTURE WHETHER SPECIFIED OR NOT. PROVIDE UNIONS AT EACH FIXTURE TO PERMIT REMOVAL OF THE FIXTURE FOR REPAIR OR REPLACEMENT. ALL EQUIPMENT SHALL BE MOUNTED IN ACCORDANCE WITH MANUFACTURER'S ROUGH–IN MEASUREMENTS UNLESS OTHERWISE NOTED ON THE DRAWINGS. SEAL WATERTIGHT THE JUNCTURE OF A FIXTURE AND THE FLOOR OR WALL.

3.34 PROVIDE VACUUM BREAKERS AND BACK FLOW PREVENTORS AS NECESSARY TO AVOID WATER BEING DRAWN BACK INTO THE WATER–SUPPLY PIPING. INSTALLATION SHALL BE IN FULL COMPLIANCE OF THE REQUIREMENTS OF THE BUILDING DEPARTMENT AND THE LOCAL HEALTH DEPARTMENT. PROVIDE SHOCK ABSORBERS IN THE PIPING SYSTEM AS NECESSARY TO PRECLUDE A WATER HAMMER PROBLEM WITH THE PIPING SYSTEM.

3.35 PIPE INSULATION: INSULATE ALL HOT, COLD, AND RECIRCULATION PIPING, AS WELL AS ALL FITTINGS AND VALVES, WITH GLASS FIBER INSULATION. NOT REQUIRED FOR RUNOUTS TO FIXTURES, RISERS FEEDING FIXTURES, UNIONS, FLANGES, STRAINERS, FLEXIBLE CONNECTIONS OR EXPANSION JOINTS. APPLY ON PIPING OVER CLEAN AND DRY SURFACES WITH EDGES FIRMLY BUTTED TOGETHER. MAKE CONTINUOUS THROUGH SLEEVES OR OPENINGS IN WALL AND FLOORS. FINISH INSULATION NEATLY AT HANGERS AND SUPPORTS. FOR FITTINGS, PROVIDE ONE COAT CEMENT, PRE–MOLDED GLASS FIBER FITTING COVER AND FINISH WITH GLASS FABRIC EMBEDDED IN FIRE RETARDANT MASTIC.

2.36 ALL VENT LINES SHALL BE SLOPED AWAY FROM CONNECTIONS TO STACK AND TOWARD THE FIXTURE IN ORDER TO PREVENT THE ENTRAPMENT OF FLUIDS IN THE VENT LINE.

3.37 ALL DRAINAGE LINES SHALL BE SLOPED AT A MINIMUM OF 1/4 IN. PER LINEAL FOOT UNLESS OTHERWISE SHOWN OR NOT ALLOWED DUE TO FIELD CONDITIONS.

3.38 PIPE SUPPORTS SHALL BE ADJUSTABLE BAND HANGERS WITH ZINC ELECTROPLATING FOR STEEL PIPE AND COPPER ELECTROPLATING FOR COPPER TUBE. SUPPORT PIPING FROM HANGERS WITH SUP–PORTING RODS. UPPER ATTACHMENTS SHALL BE AS RECOMMENDED BY MANUFACTURER FOR SECURING TO EXISTING STRUCTURE. SUPPORT VERTICAL PIPES WITH APPROVED BRACKETS OR CLAMPS. ROD DIAMETERS PER APPLICABLE CODE. SUPPORT GAS PIPING AT 8ft. INTERVALS WITH HANGERS AND SOLID RODS AT EACH HANGER. ALL PIPE HANGERS SHALL BE INSTALLED TO CONFORM TO LOCAL SEIEMIC REQUIREMENTS. INSULATED PIPING SHALL HAVE INSULATION SHIELD.

3.39 THIS CONTRACTOR SHALL PROVIDE PLUMBING EQUIPMENT, FITTINGS, AND TRIM WHERE SPECIFIED OR AS REQUIRED FOR COMPLETE INSTALLATION. THIS CONTRACTOR SHALL ROUGH–IN AND CONNECT ALL EQUIPMENT INCLUDING EQUIPMENT FURNISHED BY OTHERS.

3.40 SOIL, WASTE, AND VENT SYSTEMS SHALL BE TESTED AT 10 ft. STATIC HEAD 30 min. WITH NO DROP. POTABLE WATER PIPES, VALVES, AND FITTINGS SHALL BE DISINFECTED, AND HYDRO–STATICALLY TESTED AT 100 p.s.i.g. FOR 30 min. WITH NO DROP IN PRESSURE.

3.41 ALL COLD AND HOT WATER SUPPLY LINES SHALL BE RUN CONCEALED ABOVE CEILING AND/OR CONCEALED IN WALLS UNLESS OTHERWISE NOTED. INSTALL ON BUILDING SIDE OF INSULATION AND PROVIDE HEAT TAPE WHERE NECESSARY TO KEEP LINES FROM FREEZING.

3.42 PIPING SHOWN ON THE DRAWINGS IS DIAGRAMMATICAL AND SHALL BE COORDINATED WITH ACTUAL JOB CONDITIONS, WORK OF OTHER TRADES, HEALTH DEPARTMENT, BUILDING DEPARTMENT INSPECTION AUTHORITIES. NO ADDITIONAL COST WILL BE ALLOWED FOR RELOCATION DUE TO CONFLICTS WITH OTHER TRADES OR LOCAL CODE REQUIREMENTS.

3.43 PLUMBING CONTRACTOR SHALL VERIFY EXACT LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES AND SHALL BE RESPONSIBLE FOR DAMAGE TO ANY PUBLIC OR PRIVATE UTILITIES, WHETHER SHOWN OR NOT HEREON. REVIEW ENTIRE INSTALLATION WITH FRESH CHOICE REPRESEN–TATIVE PRIOR TO START OF WORK.

NOTE:
SEE COMPRESSED AIR & VACUUM ON SHEETS P4.0, P4.1 & P4.2 FOR ADDITIONAL DETAILS AND SPECIFICATIONS

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SHEET TITLE: SPECIFICATIONS - PLUMBING

REVISIONS:

NO.	DESCRIPTION

JOB NO.: 216081
DATE: 06/30/2016 PERMIT SET

P5.0

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REVDATE: